Planning Considerations Report
For The April and October
2008 Cycle Of Applications To Amend
The Comprehensive Development Master Plan

Miami-Dade County
Department of Planning and Zoning
Metropolitan Planning Section

May 2009

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Mayor

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Information contained in the text, tables and figure of the Park and Recreation section of this report (pp 42-48 and 55) is based on 2007 data. The 2008 data necessary to update the Park and Recreation section was not available at time of printing.

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INTRODUCTION

The primary purpose of this report is to consolidate and present information that will be used to evaluate the adequacy of the Comprehensive Development Master Plan (CDMP) in accommodating desired or anticipated community growth and development. In addition, this information will be used to evaluate applications requesting amendments to the Adopted 2015 and 2025 Land Use Plan (LUP) map.

This report contains a countywide analysis of the following topics: environmental conditions; land use patterns; supply and demand for residential, commercial, and industrial lands; and services which relate most directly to land development (roadways, mass transit, water and sewer, parks and recreation, schools, and fire and rescue protection). Also included are descriptions of the analysis methods typically used by the Department of Planning and Zoning (DP&Z) in evaluating amendment applications.

Growth Management

Miami-Dade's Comprehensive Development Master Plan is a metropolitan guide for growth management. The Plan is countywide in scale and comprehensive in scope. It establishes the County's policy framework within which specific development decisions are made. Among its key growth management objectives, the CDMP seeks to ensure that physical expansion of the urban area is managed so as to occur: 1) at a rate commensurate with projected population and economic growth; 2) in a contiguous pattern centered around a network of high-intensity activity centers well-connected by multimodal intra-urban transportation facilities; and 3) in locations which optimize efficiency in public service delivery and conservation of valuable natural resources. The state's comprehensive planning laws and the Strategic Regional Policy Plan for South Florida also encourage the foregoing objectives. The State Comprehensive Plan is a policy plan containing goals and policies addressing a broad range of subjects, from social services to environmental protection. It establishes common long-range direction for all state, regional and local governments so that they will not be working at cross-purposes. Chapter 9J-5 of the Florida Administrative Code establishes minimum criteria for the contents of local comprehensive plans adopted pursuant to the Local Government Comprehensive Planning and Land Development Regulation Act (Chapter 163, Part II, Florida Statutes). The adopted Strategic Regional Policy Plan for South Florida establishes policy direction by way of regional goal and policy statements which are derived from the State Comprehensive Plan but relate more specifically to South Florida's conditions and circumstances.

Various departments within the state government review proposed and adopted local comprehensive plans for compliance with state law and policies. The Florida Department of Community Affairs (DCA) reviews, and may comment on, proposed amendments prior to adoption. Following local adoption, DCA will issue a notice finding compliance or non-compliance of the adopted amendments with state law and policies. Challenges can be expected from DCA on amendments to local Plans that deviate from state law or adopted state, regional or County Plan policies.

Plan Implementation

Chapter 163, Florida Statutes, provides that after a local government plan has been adopted, all development and development orders by governmental agencies shall be consistent with the plan (s 163.3194[1][a], F.S.). In addition, Chapter 163 requires that each local government must adopt and enforce land development regulations that are consistent with and implement its adopted comprehensive plan (s 163.3202, F.S.). At a minimum, all local governments must enforce regulations which: regulate the subdivision of land; regulate the use of land and water and ensure the compatibility of adjacent uses; provide for open space; provide for the protection of potable water wellfields; regulate areas subject to seasonal and periodic flooding and provide for drainage and stormwater management; ensure the protection of environmentally sensitive lands; regulate signage; provide that public facilities and services meet or exceed the standards established in the comprehensive plan and are available when needed for the development, or that development orders and permits are conditioned on the availability of these public facilities and services; provide that development orders or permits shall not be issued which would result in a reduction in the level of services for the affected public facilities below the level of services provided in the comprehensive plan; and ensure safe and convenient on-site traffic flow, considering needed vehicle parking.

The DCA is authorized to review a local government's development regulations to determine its compliance with these requirements. Chapter 163 also provides that affected parties may challenge actions of local government that are not consistent with the locally adopted plan or development regulations.

Areas of Analysis

To facilitate the evaluation of applications requesting amendments to the Land Use Plan (LUP) map, Application Analysis areas are established. The basic geographic unit used in many analyses conducted by the Department of Planning and Zoning is the minor statistical area (MSA) shown in Figure 1 below. The MSA boundaries are based on census tracts, which are a component of the United States Census geography. An MSA may contain one large census tract or an aggregation of census tracts. The Department of Planning and Zoning established MSAs as planning areas to facilitate small-area analyses and to standardize areas for the development of statistical data and projections.

In order to provide a broader picture than the MSA, larger planning areas called Tiers were established as standard analysis areas (See Figure 2 on page 4 below) in the CDMP Land Use Element (October 2006 Edition). These two planning subareas - Tiers and MSAs - provide continuity in the analyses.

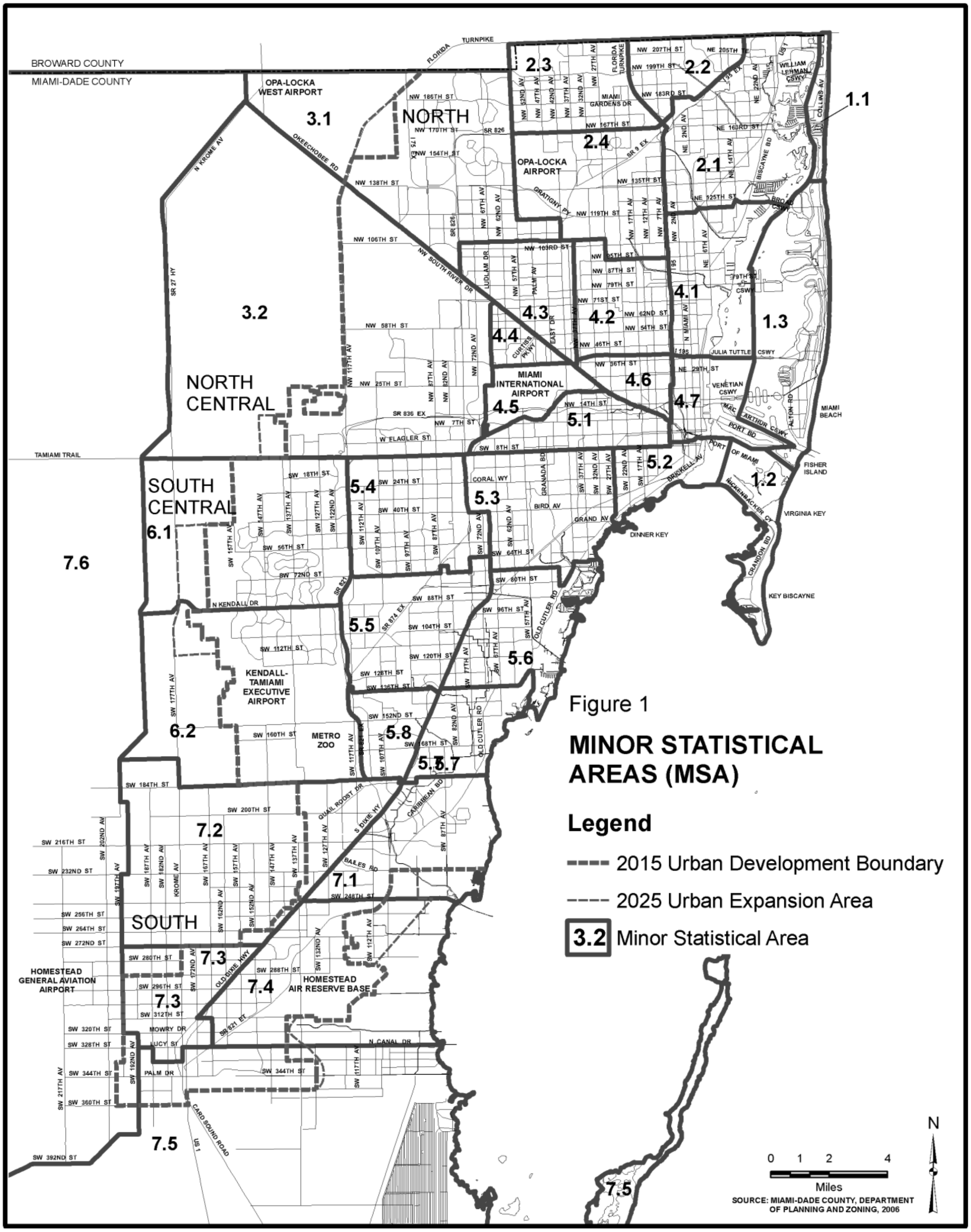


Figure 1

MINOR STATISTICAL AREAS (MSA)

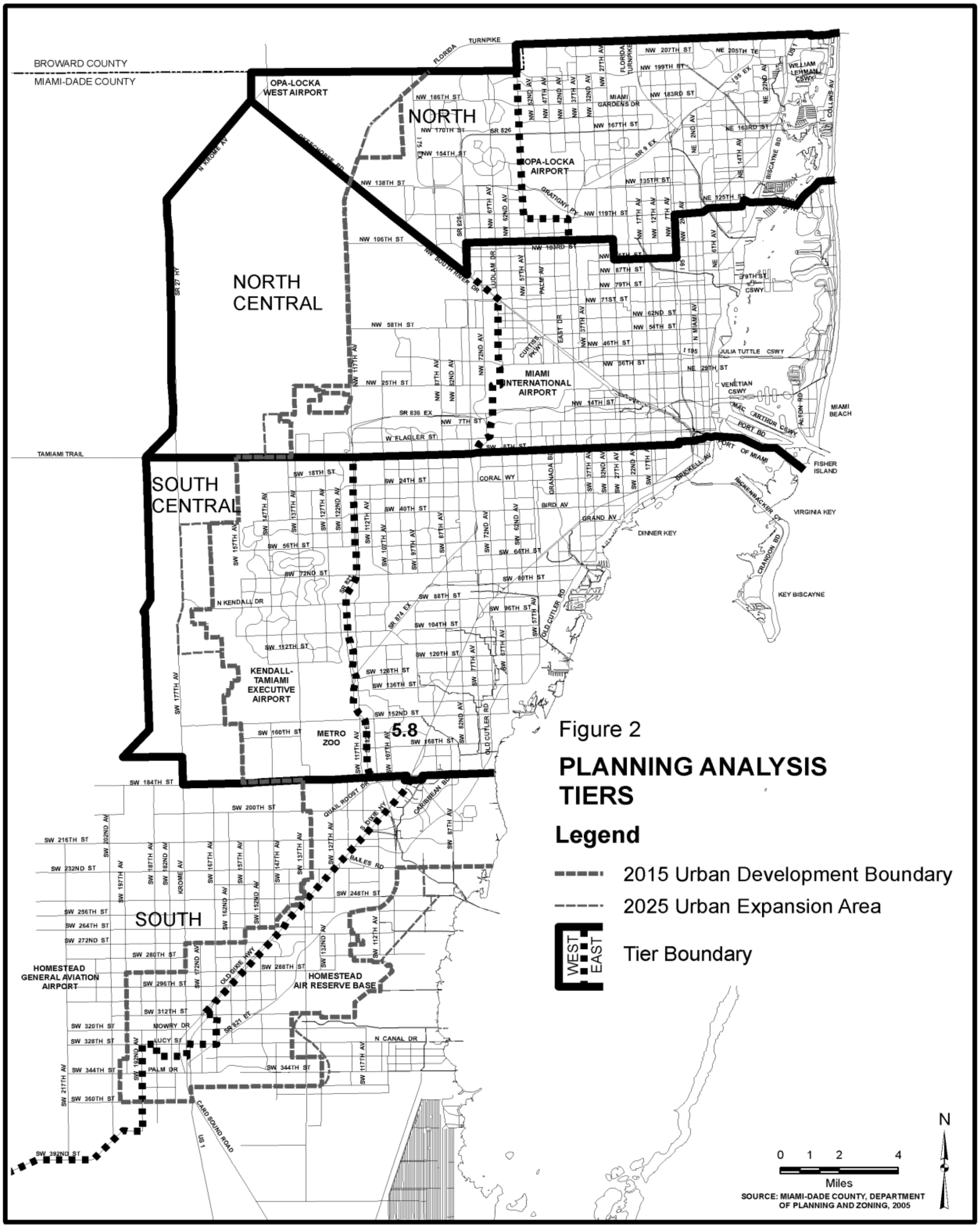


Figure 2
PLANNING ANALYSIS TIERS
Legend
2015 Urban Development Boundary
2025 Urban Expansion Area
WEST
EAST
Tier Boundary
NORTH
NORTH CENTRAL
SOUTH CENTRAL
SOUTH
BROWARD COUNTY
MIAMI-DADE COUNTY
OPA-LOCKA WEST AIRPORT
OPA-LOCKA AIRPORT
MIAMI INTERNATIONAL AIRPORT
KENDALL-TAMIAMI EXECUTIVE AIRPORT
METRO ZOO
5.8
HOMESTEAD GENERAL AVIATION AIRPORT
HOMESTEAD AIR RESERVE BASE
MIAMI BEACH
FISHER ISLAND
VIRGINIA KEY
KEY BISCAYNE
DINNER KEY
TAMIAMI TRAIL
N
0 1 2 4
Miles
SOURCE: MIAMI-DADE COUNTY, DEPARTMENT OF PLANNING AND ZONING, 2005

ENVIRONMENTAL CONDITIONS AND CONSIDERATIONS

A description of general environmental conditions is included within each respective Application review. Environmental conditions addressed include the following: natural ground elevations, soils, drainage characteristics, County and federal flood criteria, stormwater management, County wellfield protection criteria, hurricane evacuation areas, wetlands, upland forests, endangered species and habitats, exotic pest plant and animal species, historical and archaeological resources, and other relevant issues or concerns.

Several sources of information have been used in evaluating the Applications contained in the Initial Recommendations Report. These include the CDMP Conservation and Coastal Management Elements, U.S.D.A.; Natural Resources Conservation Service; Soil Survey of Dade County Area (1996); Miami-Dade County Public Works Department Topographical Maps (revised 1954-56); Miami-Dade County Flood Criteria Maps (1995); Federal Emergency Management Agency; National Flood Insurance Program Flood Insurance Rate Maps for Dade County, Florida (Mar. 1994); Wellfield Protection Areas (2006); Miami-Dade County Office of Emergency Management, Hurricane Evacuation Map (2006); and support data provided by the Miami-Dade County Department of Environmental Resources Management (DERM). DERM assisted in the evaluation of site conditions relative to County Code and other governmental requirements.

Drainage and Flood Protection

DERM reviews the proposed Applications for consistency with flood protection requirements contained in Chapter 24 of the Code of Miami-Dade County. For each Application site, information on the natural ground elevation, flood criteria and the type of drainage required is presented for each Application in table form and further explained in narrative form if necessary.

Types of soil and drainage characteristics are no longer listed for each site. Standard practices in Miami-Dade County require organic soils to be removed prior to filling to meet County flood criteria, however, these conditions are addressed at the time of development. Soils range from those that drain well, such as Dade sand, to those that drain very poorly, such as muck and clay. Since Miami-Dade County has been developing for decades, much of the urban area has been previously filled. This soil is referred to as Urban Land and has moderate drainage characteristics.

Policy CON-5A of the Conservation, Aquifer Recharge, and Drainage Element of the adopted CDMP establishes the stormwater management level of service standards for Miami-Dade County, which contains both a flood protection and water quality component. The minimum acceptable flood protection LOS standard is the protection from the degree of flooding that would result from duration of one day from a ten-year storm, with exceptions in previously developed canal basins, where additional development to this base standard would pose a risk to existing development. Further, the lowest habitable floor of all structures must be elevated above the federal flood criteria described below.

In areas having drainage limitations where site conditions prevent on-site retention of the applicable design storm, a minimum of one inch of runoff must be retained on-site prior to discharge into surface waters. For commercial and industrial land uses, site conditions should retain the applicable design storm, or a minimum of one inch of runoff or 2.5 inches times the

percentage of the site's impervious area must be retained in either a dry retention or exfiltration trench before discharge into surface waters. In addition, stormwater conveyance structures (e.g. catch basins) located in paved parking areas must be fitted with oil and grease interceptors prior to entering an exfiltration or infiltration system. Other environmental requirements that may limit development of particular sites are outlined in the following paragraphs.

Hurricane Evacuation Areas

Miami-Dade County is highly vulnerable to severe tropical storms and hurricanes (See Figure 3 below for Hurricane Evacuation Areas.) Upon making landfall on August 24, 1992, Hurricane Andrew caused tremendous physical, emotional, and economic damage to Miami-Dade County. In order to reduce the risk to lives and property due to major storms in the future, the County reviews proposed development to determine if the property lies within a hurricane evacuation zone and storm surge areas. Proximity to evacuation routes is also noted for high-risk coastal areas.

Drainage Basins

There are two types of hydrologic basins indicated in the environmental conditions summary tables. These are canal drainage basins, such as C-2 (Snapper Creek Canal), and secondly, wetland basins such as the Bird Drive Basin. Based upon information provided by the South Florida Water Management District (SFWMD), the primary canal system generally drains the portions of the County that lie east of the Turnpike north of Kendall Drive, east of levee L-31N between Kendall and Eureka Drives, and south of Eureka Drive between L-31N and the Turnpike. The remaining portions of the County receive little or no flood protection from the primary canal system.

Areas generally north of Kendall Drive and west of the Florida Turnpike have drainage limitations and frequent flooding problems. Therefore, the SFWMD and the County have established special fill criteria for certain basins in this region, such as the Western C-9 Basin, the Bird Drive Basin, the North Trail Basin, and Basin "B". These basins serve to conserve water, recharge the aquifer, and mitigate impacts of floodwater loading on the canal systems.

The 1995 federal flood criteria, which established 100-year base flood elevations for structures in Miami-Dade County, have been used to evaluate each Application site. These criteria are based on assumed land use patterns in the various basins that could be altered by CDMP amendments. Federal flood criteria are used primarily for development and insurance purposes to protect property in flood-prone areas. Special Flood Hazard Areas (zone series A and V) are those inundated by a 100-year flood. The Federal Flood AE or AH Zone designations indicate areas where base flood elevation has been determined. Inundation to flood elevation can be expected in a 100-year flood in the AE designated areas, and one to three feet of ponding can be expected in AH zones. The V Zone indicates Coastal High Hazard Areas subject to high-velocity wave action. Areas designated as X Zone are outside the 100-year flood zone but may be within the 500-year flood area. Chapter 11C of the County Code regulates development within Special Flood Hazard Areas, including stricter regulations in Coastal High Hazard Areas.

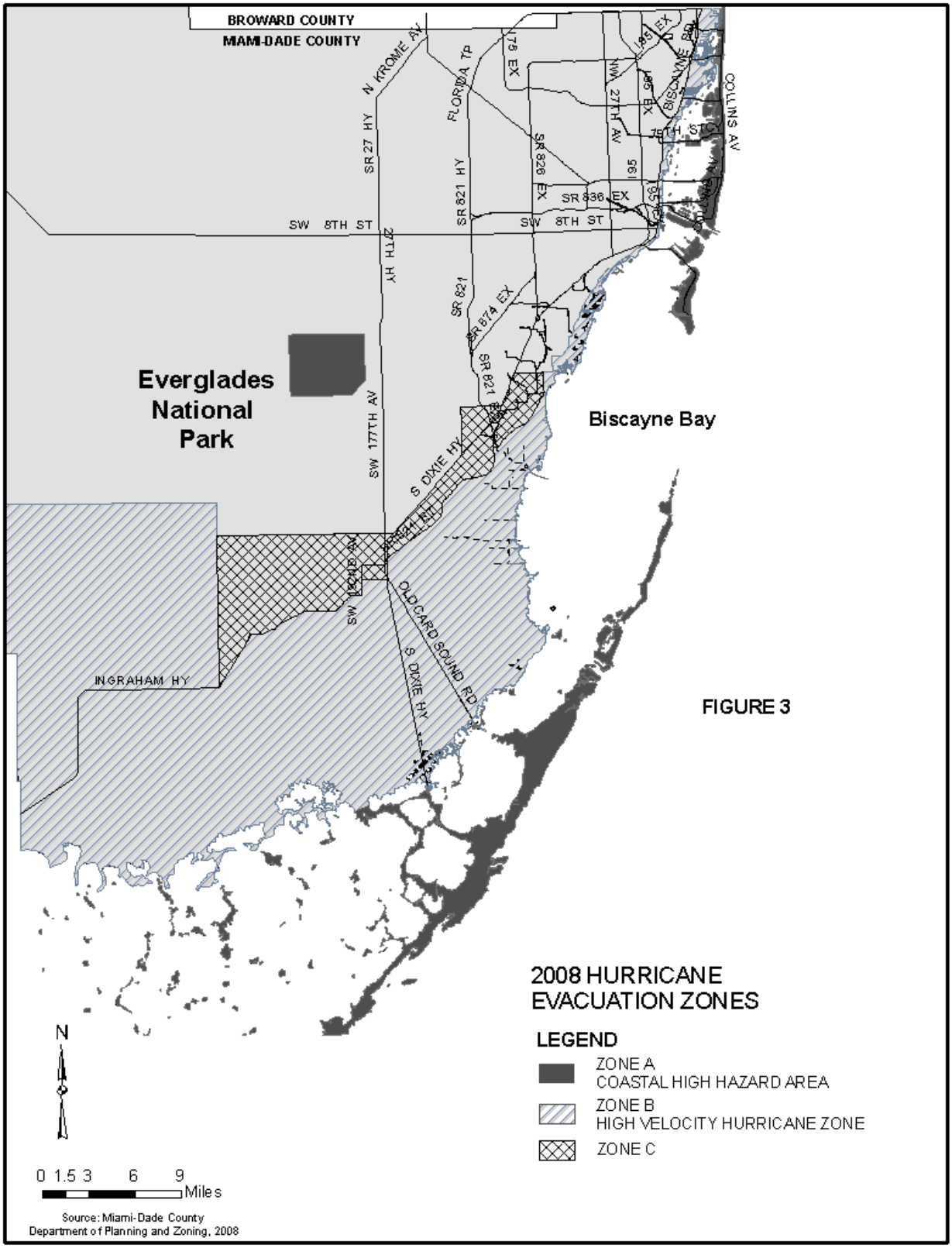

BROWARD COUNTY
MIAMI-DADE COUNTY
N KROME AV
SR 27 HY
FLORIDA TP
178 EX
SR 826
SR 821 HY
SW 8TH ST
SW 177TH AV
SR 821
SR 874 EX
SR 821 BY
Everglades National Park
Biscayne Bay
S DIXIE HY
SW 152ND AV
OLDCARD SOUND RD
INGRAHAM HY
N
0 1.5 3 6 9
Miles
Source: Miami-Dade County Department of Planning and Zoning, 2008
2008 HURRICANE EVACUATION ZONES
LEGEND
ZONE A
COASTAL HIGH HAZARD AREA
ZONE B
HIGH VELOCITY HURRICANE ZONE
ZONE C

FIGURE 3

Wellfield Protection Areas

The locations of all existing water supply wellfields in Miami-Dade County and the protection areas around the wellfields are depicted in Figure 4 below. For all wellfields, the Wellfield Protection Boundary is the 210-day groundwater travel distance from the wellheads, except around the Northwest (1), Hialeah-Preston group (which includes Hialeah-Preston and Miami Springs Upper and Lower Wellfields 2A-C), and the Alexander Orr complex (which includes Alexander Orr, Snapper Creek, Southwest and West Wellfields 5, 5A, 5B and 16). Development restrictions are increasingly more stringent the closer the property to a wellfield.

The current average-day pumpage wellfield protection area boundary for the Hialeah-Preston group and the Alexander Orr complex is delineated by the 1.0-foot drawdown contour under daily average permitted pumping rates. The maximum day boundary is also delineated by a 1.0-foot drawdown contour but under the maximum permitted pumping rate. A drawdown is defined as the difference between the existing or projected water table elevation that occurs without the wellfield withdrawal, contrasted with the groundwater level, which occurs when the wellfield is pumping.

The current protection area established for the County's West Wellfield is also shown on Figure 3 below. That protection area boundary is delineated by the 0.1-foot drawdown contour. The Northwest Wellfield Protection Area west of the Florida Turnpike Extension is delineated by the 0.25-foot drawdown contour. A safety buffer has been established east of the Turnpike to ensure protection of Northwest Wellfield groundwater during drought periods.

Table 1 on page 10 below, summarizes the land use restrictions and regulations that apply within all urban wellfield protection areas except the Northwest and the West Wellfield Protection Areas, which are subject to special protection regulations governing land use activities, which are outlined in Table 2 on page 11 below.

Wetlands and Upland Forests

DERM delineates wetlands based on vegetation, soils, and hydrology consistent with the state methodology described in Chapter 62-340, Florida Administrative Code. If there are native wetlands on site, preservation and mitigation criteria may also apply. As stated in the CDMP, Miami-Dade County has established policies to protect, restore, and enhance wetlands. An environmental summary in each Application review indicates if the site is subject to wetland permit requirements.

DERM also reviews each Application site for the presence of environmentally sensitive areas, protected specimen trees and/or Natural Forest Communities (NFC). The Board of County Commissioners, per Resolution R-1764-84 and Ordinance 84-34, designated approximately 230 environmentally sensitive pinelands and hammocks totaling 3,645 acres in Miami-Dade County as NFC. Of the total 3,645 acres of designated NFC's, 2,192 acres have been purchased through the Environmentally Endangered Land (EEL) program.

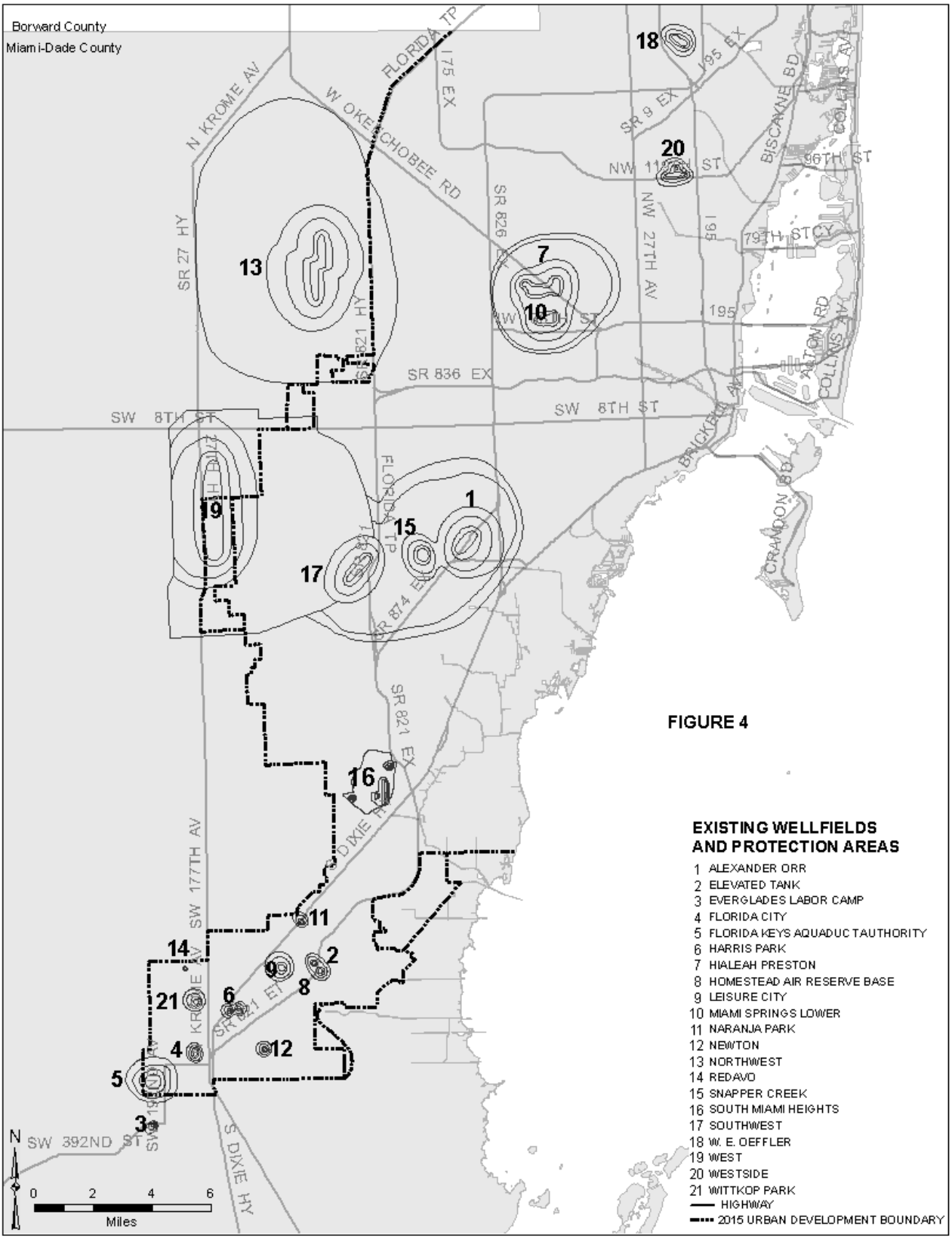
The EEL program was established in 1991 to preserve and protect environmentally valuable and endangered lands in Miami-Dade County. The Miami-Dade County Tree and Forest Resources Protection Code regulates development in these areas and provides preservation standards for these forests during development. A permit is required prior to the removal or

relocation of any trees or understory vegetation in a NFC. In addition, Chapter 25-B of the Code provides for the execution of a covenant to preserve and maintain privately owned parcels of NFC's in their natural state in exchange for preferential tax treatment. The Code also provides protection standards for Specimen Trees (trees which are 18 inches or greater in diameter) during development. Regardless of whether a site contains a NFC or sensitive tree resources, a permit review by DERM is required prior to the removal or relocation of trees on any site. Potential and controlled exotic pest plants are addressed through permitting, enforcement and public outreach programs administered by the DERM and Building Departments.

On December 5, 1995, the Board of County Commissioners adopted a revised Landscape Ordinance as Chapter 18A of the County Code, and on February 6, 1996 adopted a Landscape Manual, per Resolution R-90-96. The Landscape Ordinance applies countywide to both unincorporated areas and municipalities. All new development must meet the standards of this code. The purpose of the Landscape Manual is to illustrate the standards adopted in the Ordinance and provide recommendations for landscaping, including xeriscaping with native species to conserve water and reduce the potential for invasive exotic plants to threaten natural areas. Prohibited and controlled exotic pest plants are addressed through the permitting process by the Department of Planning and Zoning.

Historic and Archaeological Sites

Miami-Dade County contains a significant number of historic and archaeological sites and zones under both municipal and County jurisdictions. These sites and zones are identified for their significance and preserved when merited because they represent distinctive elements of the County's cultural, social, economic, political, scientific, religious, prehistoric and architectural history. The Miami-Dade County Office of Historic Preservation performs site reviews for historical and archaeological elements for properties located countywide. Within the County, a number of properties containing exceptional historical and archaeological elements are designated by the County's Historic Preservation Board for their unique attributes. Once designated, County Ordinance 81-13 (Chapter 16A-1 et. seq.), the Historic Preservation Ordinance, requires that Certificates to Dig and Certificates of Appropriateness are required prior to any site work. Designated properties may also be eligible for certain local, state, or federal tax incentives for approved restoration, renovation, or rehabilitation work. Federal grants may be available for certain designated sites.



Source: Miami-Dade Department of Planning and Zoning, 2008

Table 1
Urban Wellfields Land Use Restrictions and
Prohibitions for New Construction

ACTIVITY	PROTECTION ZONES						
	100'	10 Day	30 Day	100 Day	210 Day	Avg. Day	Max. Day
RESIDENTIAL USES SERVED BY SEWERS	P	2.4 Units/Acre	4.6 Units/Acre	NR	NR	NR	NR
STRINGENT SEWER CONSTRUCTION CRITERIA	Req.	Req.	Req.	Req.	Req.	Req.	Req.
STORMWATER DISPOSAL	P	Infiltration Only	Infiltration & seepage only	Infiltration, seepage or over flow outfall		NR	NR
ROCKMINING	P	P	P	40 ft. max depth or 30 day travel time buffer, land dedication, security required		R	NR
RESIDENTIAL LAND USES SERVED BY SEPTIC TANKS	P	R	R	R	R	NR	NR
NON-RESIDENTIAL USES HANDLING HAZARDOUS MATERIALS	P	P	P	P	P	R	NR
EXISTING USES HANDLING HAZ. MAT. MUST REDUCE RISK UPON EXPANSION	Req.	Req.	Req.	Req.	Req.	NR	NR
NON-RESIDENTIAL USES SERVED BY SEPTIC TANKS	P	R	R	R	R	NR	NR
NON-RESIDENTIAL USES SERVED BY SEWERS	P	R	R	NR	NR	NR	NR
UNDERGROUND STORAGE TANKS FOR HAZARDOUS MATERIALS	P	P	P	P	P	R	R
PIPELINES TRANSPORTING HAZARDOUS MATERIALS	P	P	P	P	P	P	P
LIQUID WASTE STORAGE, TREATMENT OR DISPOSAL METHODS OTHER THAN SEPTIC TANKS & PUBLIC SANITARY SEWERS	P	P	P	P	P	P	NR
RESOURCE RECOVERY AND MANAGEMENT FACILITIES	P	P	P	P	P	P	P
P=Prohibited NR=Not Restricted Req.=Required R=Restricted							

Table 2
Northwest and West Wellfields Protection Area
Land Use Restrictions and Prohibitions for New Construction

ACTIVITY	PROTECTION ZONES					
	100'	10 Day	30 Day	100 Day	210 Day	Max. Day
RESIDENTIAL USES SERVED BY SEPTIC TANKS	P	R	R	R	R	NR
RESIDENTIAL AND NON-RESIDENTIAL USES SERVED BY SEWERS	P	2.4/Acre	4.6/Acre	NR	NR	NR
STRINGENT SEWER CONSTRUCTION CRITERIA	Req.	Req.	Req.	Req.	Req.	Req.
STORMWATER DISPOSAL	P	Infiltration	Infiltration & Seepage	Infiltration, seepage or overflow outfall		NR
ROCKMINING	P	P	P	40 ft. max depth or 30 day travel time buffer, land dedication, security required		NR
NON-RESIDENTIAL USES HANDLING HAZARDOUS MATERIALS	P	P	P	P	P	P
EXISTING USES HANDLING HAZ. MAT. MUST REDUCE RISK UPON EXPANSION	Req.	Req.	Req.	Req.	Req.	Req.
BU-3 AND IU ZONING	P	P	P	P	P	P
NON-RESIDENTIAL USES SERVED BY SEPTIC TANKS	P	P	P Excluding Rockmining & Ancillary Uses	P	P	P
UNDERGROUND STORAGE TANKS FOR HAZARDOUS MATERIALS	P	P	P	P	P	P
PIPELINES TRANSPORTING HAZARDOUS MATERIALS	P	P	P	P	P	P
LIQUID WASTE STORAGE, TREATMENT OR DISPOSAL METHODS OTHER THAN SEPTIC TANKS & PUBLIC SANITARY SEWERS	P	P	P	P	P	P
RESOURCE RECOVERY AND MANAGEMENT FACILITIES	P	P	P	P	P	P
P=Prohibited NR=Not Restricted Req.=Required R=Restricted						

EXISTING AND PLANNED LAND USE PATTERNS

Among the considerations addressed in evaluating individual applications to amend the CDMP Land Use Plan map are the relationships of the requested use to the immediate surroundings in which the Application is located, and to the broader area of the County. The relative merit of the requested use is also evaluated in comparison to the currently planned use.

Each Application analysis contains appendices with additional information related to each site. The appendices include a series of existing and future land use maps, aerial zoning maps, the amendment application filed, the Miami-Dade Public Schools analysis and the fiscal impact of the site. Additional information may include any proposed declaration of restrictions submitted by the applicant, photos of the application site, or other information requested or supplied by the applicant, such as a traffic study.

Population Projections

Population projections are fundamental to the land needs analysis, both for the entire County and for subareas. The population projections used in this analysis are those proposed in the October 2007 CDMP Amendment Cycle. They are used as the basis for projecting housing demand.

Housing Projections

The population projections were converted into housing demand projections by applying Census 2000 vacancy rates and household size figures to the projected population. The Census 2000 vacancy rates were left unchanged over time, but the household size figures were inflated slightly from 2.84 persons-per-household in 2000 to 2.9 persons-per-household in 2030. The projections show a sustained demand for housing through 2025, ranging from about 14,155 dwelling units per year from 2008 through 2010, to 11,441 a year in the 2020 to 2025 period.

RESIDENTIAL LAND

The total residential capacity of the County is the sum of existing units in 2008 and an estimate of new units that can be built on vacant, residentially zoned, or CDMP designated land. There was no attempt to estimate the redevelopment potential of urban core areas except for those areas in close proximity to South Dade Busway (five Urban Centers) or where municipal information was obtained. There was no provision made for new capacity arising from the demolition of existing housing units.

There are two components used to determine residential capacity. The first component of residential capacity is year 2008 existing housing units. This was derived from Census 2000 housing counts plus estimated new units constructed in the 2000 to 2008 period from the Property Appraiser's Real Property File.

The second component of residential capacity (the available capacity) is the estimate of the number of new housing units that can be built on vacant developable land within the Urban Development Boundary (UDB). The available capacity figures are a 2008 data set from the

Department's land use file. These figures were updated through August 2008 using the Real Time Development Data file, derived from impact fee payment records maintained by the Department. The year 2008 available residential capacity within the Urban Development Boundary was 127,746 housing units after an allowance (3 percent) was made for land that will not be developed.

Countywide Supply and Demand

Table 3 below compares the projected demand and supply of land for urban residential development countywide. This is an aggregation of analyses done in the 32 MSAs across the County. Gross capacity was reduced by 3 percent to reflect the fact that even in mature urban residential areas in Miami-Dade County, approximately 3 percent of the land base typically remains undeveloped.

It is important to note that the residential development capacity of vacant land within the Urban Development Boundary is not fixed. It is established and re-established by the planning and zoning decisions of the County and municipal governments.

The estimated countywide capacity in August 2008 was 127,746 units. The projected demand for housing is 14,155 units per year in the 2008 through 2010 period, 11,227 units per year in the 2010-2015 period, and about 11,631 units per year in the 2015-2025 period. These figures reflect the projected net increase in units required. New construction will be higher because housing will also be required to replace units that are demolished or converted to other uses. These replacement units generally do not result in net increases of any significance, and it is assumed that these can be accommodated by redevelopment of currently developed land.

In the year 2018, the remaining residential capacity of vacant land within the current Urban Development Boundary is projected to be depleted. The single-family supply is projected to be exhausted in 2014; the multi-family in 2023. The single-family capacity is smaller than the multi-family, and the projected demand for single-family units is much higher than that for multi-family.

Table 3
Residential Land Supply/Demand Analysis,
Countywide, 2008 to 2025

Analysis Done Separately For Each Type, i.e. No Shifting of Demand Between Single & Multi-Family Type	Structure Type		
	Single-Family	Multifamily	Both Types
Capacity in 2008	42,264	85,482	127,746
Demand 2008-2010	6,899	7,256	14,155
Capacity in 2010	28,466	70,970	99,436
Demand 2010-2015	6,148	5,079	11,227
Capacity in 2015	0	45,575	43,301
Demand 2015-2020	6,400	5,421	11,821
Capacity in 2020	0	18,470	0
Demand 2020-2025	6,048	5,393	11,441
Capacity in 2025	0	0	0
Depletion Year	2014	2023	2018

Note: Residential capacity is expressed in terms of housing units.
Housing demand is an annual average figure based on population projections.
Source: Miami-Dade Department of Planning and Zoning, Planning Research Section, August 2008.

Supply and Demand within Tiers of the County

Tables 4, 5, 6, and 7 below, present supply and demand data for four tiers and for the eastern and western portions of these areas. These four areas are called "Planning Analysis Tiers" and are the North, North-Central, South-Central, and South Tiers

In general, the undeveloped residential land supply patterns are similar to those seen in previous years. It is important to note that for the purpose of the tier-specific supply/demand analyses, each tier is treated independently. Thus, if the supply of a housing type is exhausted in a particular tier, it is not assumed that the demand will shift to another tier in the County. It is not possible to project where housing demand might surge if the supply of land in a single tier is exhausted. That is why it would appear that the remaining capacity for the sum of the individual tiers in the year 2025 is higher than the countywide figure.

Table 4
Residential Land Supply/Demand Analysis
North Tier, 2008 to 2025

Analysis Done Separately for Each Type, i.e. No Shifting of Demand between Single & Multifamily Type	Subtier								
	Eastern Part			Western Part -- MSA 3.1			North Total		
	Single Family	Multi-Family	Both Types	Single Family	Multi-Family	Both Types	Single Family	Multi-Family	Both Types
Capacity in 2008	3,269	9,724	12,993	4,702	382	5,084	7,971	10,106	18,077
Demand 2008-2010	337	833	1,170	78	104	182	415	937	1,352
Capacity in 2010	2,595	8,058	10,653	4,546	174	4,720	7,141	8,232	15,373
Demand 2010-2015	289	692	981	356	473	829	645	1,165	1,810
Capacity in 2015	1,150	4,598	5,748	2,766	0	575	3,916	2,407	6,323
Demand 2015-2020	302	734	1,036	337	449	786	639	1,183	1,822
Capacity in 2020	0	928	568	1,081	0	0	721	0	0
Demand 2020-2025	281	682	963	188	250	438	469	932	1,401
Capacity in 2025	0	0	0	141	0	0	0	0	0
Depletion Year	2018	2021	2020	2025	2010	2015	2021	2017	2018

Note: Projected housing demand is an annual average figure derived from 2008 population projections.
Source: Miami-Dade County Department of Planning and Zoning, Research Section, August 2008.

Table 4 above shows that the North Tier has sufficient capacity to accommodate projected demand through the year 2018. The single-family supply is projected to be exhausted during 2021, whereas the multi-family supply is projected to be depleted during 2017. The projected demand for housing is higher in the eastern half than in the western half of the North Tier where the residential capacity is also higher. The residential capacity in the eastern half is projected to be depleted by 2020. In the western half, the projected depletion year is 2015.

Table 5 below shows the North Central Tier has sufficient capacity to accommodate projected demand until 2017. The single-family supply is projected to be exhausted by 2012, whereas the multi-family supply will be depleted in 2019. The projected demand for housing is higher in the eastern half than in the western half of the North Central Tier. Nevertheless, the capacity in the eastern half is higher, and residential land supply is projected to be depleted in 2019. In the western half, the projected depletion year is 2015.

Table 5
Residential Land Supply/Demand Analysis
North Central Tier, 2008 to 2025

Analysis Done Separately for Each Type, i.e. No Shifting of Demand between Single & Multifamily Type	Subtier								
	Eastern Part			Western Part -- MSA 3.2			North Central Total		
	Single Family	Multi-Family	Both Types	Single Family	Multi-Family	Both Types	Single Family	Multi-Family	Both Types
Capacity in 2008	2,771	24,388	27,159	1,763	6,520	8,283	4,534	30,908	35,442
Demand 2008-2010	455	3,402	3,857	368	339	707	823	3,741	4,564
Capacity in 2010	1,861	17,584	19,445	1,027	5,842	6,869	2,888	23,426	26,314
Demand 2010-2015	283	1,800	2,083	689	633	1,322	972	2,433	3,405
Capacity in 2015	446	8,584	9,030	0	2,677	259	0	11,261	9,289
Demand 2015-2020	245	2,003	2,248	663	609	1,272	908	2,612	3,520
Capacity in 2020	0	0	0	0	0	0	0	0	0
Demand 2020-2025	280	2,212	2,492	666	613	1,279	946	2,825	3,771
Capacity in 2025	0	0	0	0	0	0	0	0	0
Depletion Year	2016	2019	2019	2011	2019	2015	2012	2019	2017

Note: Projected housing demand is an annual average figure derived from 2008 population projections.
Source: Miami-Dade County Department of Planning and Zoning, Research Section, August 2008.

Table 6
Residential Land Supply/Demand Analysis
South Central Tier, 2008 to 2025

Analysis Done Separately for Each Type, i.e. No Shifting of Demand between Single & Multifamily Type	Subtier								
	East of Turnpike			West of Turnpike			South Central Total		
	Single Family	Multi-Family	Both Types	Single Family	Multi-Family	Both Types	Single Family	Multi-Family	Both Types
Capacity in 2008	2,231	17,630	19,861	3,306	2,898	6,204	5,537	20,528	26,065
Demand 2008-2010	747	1,351	2,098	1,023	48	1,071	1,770	1,399	3,169
Capacity in 2010	737	14,928	15,665	1,260	2,802	4,062	1,997	17,730	19,727
Demand 2010-2015	498	623	1,121	1,376	66	1,442	1,874	689	2,563
Capacity in 2015	0	11,813	10,060	0	2,472	0	0	14,285	6,912
Demand 2015-2020	616	729	1,345	1,335	63	1,398	1,951	792	2,743
Capacity in 2020	0	8,168	3,335	0	2,157	0	0	10,325	0
Demand 2020-2025	632	778	1,410	663	32	695	1,295	810	2,105
Capacity in 2025	0	4,278	0	0	1,997	0	0	6,275	0
Depletion Year	2011	>2025	2022	2010	>2025	2012	2011	>2025	2017

Note: Projected housing demand is an annual average figure derived from 2008 population projections.
Source: Miami-Dade County Department of Planning and Zoning, Research Section, August 2008.

Table 6 above shows that the South Central Tier has sufficient capacity to accommodate projected demand through the year 2017. The single-family supply is projected to be exhausted by 2011, whereas the multi-family supply is projected to be depleted beyond 2025. The projected demand for housing is higher in the western half than in the eastern half, while the residential capacity in the western half is lower. This capacity is projected to be depleted by 2012. In the eastern half, the projected depletion year is 2022.

Table 7
Residential Land Supply/Demand Analysis
South Tier, 2008 to 2025

Analysis Done Separately for Each Type, i.e. No Shifting of Demand between Single & Multifamily Type	Subtier								
	East of US-1			West of US-1			South Total		
	Single Family	Multi-Family	Both Types	Single Family	Multi-Family	Both Types	Single Family	Multi-Family	Both Types
Capacity in 2008	16,041	14,481	30,522	8,181	9,459	17,640	24,222	23,940	48,162
Demand 2008-2010	3,140	1,061	4,201	751	118	869	3,891	1,179	5,070
Capacity in 2010	9,761	12,359	22,120	6,679	9,223	15,902	16,440	21,582	38,022
Demand 2010-2015	1,701	633	2,334	956	159	1,115	2,657	792	3,449
Capacity in 2015	1,256	9,194	10,450	1,899	8,428	10,327	3,155	17,622	20,777
Demand 2015-2020	1,939	711	2,650	963	123	1,086	2,902	834	3,736
Capacity in 2020	0	5,639	0	0	7,813	4,897	0	13,452	2,097
Demand 2020-2025	1,975	688	2,663	1,363	138	1,501	3,338	826	4,164
Capacity in 2025	0	2,199	0	0	7,123	0	0	9,322	0
Depletion Year	2015	>2025	2018	2016	>2025	2023	2016	>2025	2020

Note: Projected housing demand is an annual average figure derived from 2008 population projections.
Source: Miami-Dade County Department of Planning and Zoning, Research Section, August 2008.

Table 7 above shows that the South Tier has sufficient capacity to accommodate projected housing demand to the year 2020. The large capacity for single-family units is projected to be depleted in 2016, and multi-family capacity extends to beyond 2025. The projected demand for housing decreases from 5,070 units per year in the 2008-2010 period to about 4,164 units a year in the 2020 to 2025 period. This is approximately 37 percent of the projected housing demand in the 2020 to 2025 period for the entire County and is a reflection of the availability of residential land for development in South Miami-Dade. Housing demand is higher in the eastern half than in the western half of the South Tier; also, residential capacity in the eastern half is larger than the western half.

COMMERCIAL, OFFICE AND INDUSTRIAL LAND

The Department's most recent assessment of commercial and industrial land availability is presented below. This will provide the reader with a picture of the existing land use character and development rates throughout the County for these types of uses.

The adequacy of the Plan's existing capacities to accommodate projected commercial and office development is evaluated both on a countywide basis, and for smaller areas of the County, namely the Planning Analysis Tiers and Minor Statistical Areas. Absorption tables are presented for Commercial and Office and Industrial land.

The Research Section of the Department of Planning and Zoning has conducted an inventory (2008) of the supply, and assessed the use of land for industrial and commercial development in Miami-Dade County to determine whether it can sustain projected commercial and industrial demand through the years 2015 and 2025. Following are estimates and projections of commercial and industrial absorption in Miami-Dade County.

Commercial Land

The first step in deriving countywide control totals was to obtain existing commercial acreage, commercial employment, and total population for the years 1994, 1998, 2000, 2001, 2003, 2004, 2005, 2006, 2007, and 2008. Secondly, a linear regression was run with commercial acres being the dependent variable and commercial employment and population as the independent variable. The regression coefficient was then applied to the independently projected population and commercial employment to arrive at projected demand for commercial land.

The next step consisted in the allocation of projected countywide demand for commercial land to each MSA. To obtain the MSA's share of the countywide demand for commercial land, the following procedures were followed: The annual change in "in-use" commercial land for the 1994-1998, 1998-2000, 2000-2001, 2001-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, and 2007-2008 periods was calculated. Then the average of these 9 periods, by MSA, was computed. If the average was negative, the MSA's share was put as zero. Next, the growth in population from 2008 to 2025, for each MSA, was calculated. The final step involved averaging the annual growth in commercial land and the population growth for each MSA. This was done to better take into account the historical demand for commercial land and the projected growth in population by MSA. It represents a refinement of the method previously applied. Lastly, the countywide demand was distributed proportionately to the MSA's share of the total average growth (average of historical growth of "in-use" commercial land and projected population growth) for all MSAs. The end result is an annual absorption rate for the 2008-2025 period.

Table 8 below presents countywide projections of commercial land absorption. For purposes of this analysis, the only vacant land included in commercial supply is land that is specifically zoned for business, professional office, office park, or designated "Business and Office" on the CDMP Land Use Plan map. While vacant industrially zoned or designated land may be and often is used for commercial use (in particular for office development, but including retail uses such as hotels and restaurants), for purposes of this analysis none was included in the commercial land supply.

The first four columns of Table 8 summarize the result of applying the method described. Countywide, the 2,619.5 acres of vacant commercially zoned or designated land available in 2008 would be depleted in the year 2029, at the average annual absorption rate of 127.10 acres. However, the projected depletion year varies from Tier to Tier. Only in the South-Central Tier will supply be depleted before 2020. Individual MSAs reveal more variability. In MSAs 1.1, 1.2, 1.3, 5.2, 5.4, 5.5, 5.6, 5.8, 6.1, and 7.6 the supply of commercial land will be depleted before 2020. At this point, it is necessary to point out that the projected year of depletion provides only one indication of the areas within the County where additional land for commercial use may be warranted. However, it cannot be concluded that land for commercial use should automatically be added in the specific MSAs where the numbers indicate depletion of supply before the year 2020. Because of the dual purposes of commercial land use, the land allocation

process and planning for future land availability are more complex than for the case of residential or industrial land use.

One important consideration related to the absorption of commercial land in the future is the land cost factor. As the supply of vacant developable land keeps decreasing and land becomes more expensive, commercial developments will tend to be built and sized more efficiently by utilizing a higher ratio of building square footage to land acreage. As a result, the average annual absorption rate for commercial uses may be lower in the future than it has been in the past.

It is worth noting that by redeveloping or adding additional uses to existing sites, the existing supply would accommodate significant growth. A second consideration is that some commercial uses are "population serving" and should be distributed throughout the community with consideration for convenience to the residential population, while some commercial uses can be categorized as "export" uses which may be better located in areas having good transportation access to larger areas, and where other similar or complementary uses can agglomerate into commercial or employment centers. In this regard, "export" oriented commercial centers - like regional centers, industrial centers, and transportation facilities - can help give structure to the urban pattern and comprehensive planning should foster this.

In an effort to gauge what is an appropriate allocation of commercial land to "population serving" commercial uses, the ratio of commercial acres per 1,000 persons by MSA, Tier, and countywide was analyzed. The final two columns of Table 8 indicate commercial acres per 1,000 persons for each MSA, Tier and the countywide average. The countywide ratio for 2015 is projected to be 6.0 acres per 1,000 persons declining to 5.4 per 1,000 persons by the year 2025. This assumes that no industrial land is used for commercial purposes and no further supply is added. While 5.4 acres per 1,000 persons is the County average, this includes commercial uses that are characterized as "export" uses such as regional centers, racetracks, commercial stadiums, and other such commercial uses. If a local area registers a commercial land/population ratio below average, it does not necessarily indicate an undesirable condition. However, those MSAs or Tiers showing ratios significantly below the Tier or Countywide ratio should warrant closer review to determine whether the commercial needs of the area's population would be adequately met.

Table 8
Projected Absorption of Commercial Land
Miami-Dade County, 2008-2025

Tier and Minor Statistical Area	Vacant Commercial Land 2008 (Acres)	Commercial Acres Acres in Use 2008 (Acres)	Average Annual Absorption Rate 2008-2025 (Acres)	Projected Year of Depletion	Commercial Acres Per Thousand Persons 2015 (Acres)	2025 (Acres)
North Tier						
1.1	2.3	67.8	0.56	2012	2.9	2.6
2.1	64.8	1079.2	2.53	2025+	6.5	6.2
2.2	29.7	259.1	1.60	2025+	5.2	4.7
2.3	175.4	639.7	3.02	2025+	9.3	8.9
2.4	39.0	399.9	0.72	2025+	6.4	6.1
3.1	273.0	1003.2	16.87	2025+	5.4	5.0
Total	584.2	3,548.9	25.30	2025+	6.3	5.9
North Central Tier						
1.3	6.1	248.5	1.09	2014	2.1	2.0
3.2	349.2	1,598.1	16.79	2025+	11.7	9.6
4.1	55.8	363.7	0.47	2025+	4.6	4.5
4.2	127.5	429.4	0.67	2025+	6.4	6.2
4.3	17.6	886.3	1.28	2022	7.4	7.1
4.4	3.2	68.3	0.08	2025+	4.3	4.2
4.5	26.3	214.9	1.06	2025+	--	--
4.6	33.8	312.8	0.58	2025+	6.9	6.8
4.7	109.7	310.9	5.51	2025+	6.0	4.3
5.1	23.4	513.6	1.73	2022	4.0	3.7
Total	752.6	4,946.5	29.25	2025+	6.6	6.0
South-Central Tier						
1.2	0.0	90.8	0.04	2008	7.8	7.7
5.2	18.3	240.1	2.64	2015	3.3	2.8
5.3	23.8	604.8	0.54	2025+	4.9	4.8
5.4	3.2	582.0	1.60	2010	5.6	5.5
5.5	11.8	542.3	1.46	2016	6.3	5.8
5.6	3.2	229.8	0.29	2019	6.6	6.3
5.7	8.1	258.8	0.52	2024	9.5	8.9
5.8	15.7	113.5	2.72	2014	3.0	2.7
6.1	35.9	523.4	10.72	2011	2.8	2.6
6.2	207.6	609.3	14.36	2022	5.2	4.8
Total	327.6	3,794.8	34.90	2017	4.7	4.4
South Tier						
7.1	105.3	322.5	5.08	2025+	5.6	4.3
7.2	43.0	197.5	4.01	2019	4.1	3.3
7.3	202.1	207.2	1.52	2025+	9.5	8.0
7.4	245.4	387.9	14.62	2025+	6.1	4.3
7.5	359.3	457.8	9.83	2025+	22.7	16.3
7.6	0.0	1.3	2.58	2008	0.1	0.0
Total	955.1	1,574.2	37.64	2025+	7.7	5.6
Grand Total	2,619.5	13,864.4	127.10	2029	6.0	5.4

-- Insignificant population.
Source: Miami-Dade County Department of Planning & Zoning, Planning Division, Research Section, August 2008.

Where both measures – projected commercial land depletion year and the commercial acres per 1,000 population ratio – indicate a future need for additional commercial land, it is probable that this need will become apparent during the projection period, unless additional land is designated on the LUP map for Commercial or Office use. Thus, both the vacancy condition and the adequacy of the commercial land to population ratio need to be considered when determining locations where additional commercial land should or need not be added.

Another factor that must be considered is the existence of vacant industrial land. There has been a continuing pattern in which there is much crossover in the use of industrial land for commercial purposes. In March 2005, the Research Section of the Planning and Zoning Department completed a study analyzing the demand and supply of vacant industrial land. In the study, all vacant industrial land in 1994 was identified. Next, these parcels were examined in 2003 to determine what actually occurred to them over this time period. The data showed that 16.9 percent of all industrial designated vacant land was in industrial use nine years later, while 23 percent was in non-industrial uses and 60 percent remained vacant. Even in those MSAs that experienced the highest growth in industrial land use, it was found that a significant amount of the industrially designated land was converted to non-industrial uses. It is highly probable that as land for commercial and/or residential uses is depleted, the conversion of industrial land will also increase.[1] An earlier study utilizing a sample of 5,600 acres and employing data going back to 1985 thru 2000 found that in the latter year, 39 percent of vacant industrial land was in industrial use or still designated for such use. The other 61 percent was either changed to a designation other than industrial or actually put to another use.

In addition to the traditional depletion analysis, a new procedure was added to analyze the adequacy of small-scale applications for commercial uses. The procedure is what is commonly known as a Trade Area analysis. It consists of drawing a radius (the size of the radius depends on the project's size) around the proposed project and computing "in-use" commercial acreage, and the vacant commercially zoned land inside its radius.

Industrial Land

Table 9 below presents countywide projections of industrial land absorption. The first step in projecting Miami-Dade County's future industrial land use was to develop control totals for countywide use of this type of land in each projection year. Historical land use data for 1994, 1998, 2000, 2001, 2003, 2004, 2005, 2006, 2007, and 2008 was divided by relevant employment data to obtain acre per employee ratios for each year. The average ratio was applied to industrial employment projections to obtain projected demand for industrial land. Using historical land use data, the share of industrial land was projected and applied to the total for each projection year.

Before drawing conclusions from Table 9, the reader must consider the assumptions and methods used in developing the information presented, the high potential for cross-over among the land uses which may occur on industrially designated land, and the spatial distribution of uses and sites in the area. Much cross-over can occur among business, office, and industrial uses, with commercial uses occurring in industrially designated land and, in particular, office

[1] Miami-Dade County Department of Planning and Zoning, Research Section, The Demand and Supply of Industrial Land in Miami-Dade County, (2005), P. 6.

developments occurring on land zoned or designated either for industrial use or for business use.

It is inappropriate to draw conclusions regarding the adequacy or inadequacy of supply in any individual MSA solely from the information provided in Table 9, as well as the projected supply and demand in a single MSA; it is necessary to consider all types of land supply and also land in adjoining MSAs.

In projecting future demand for industrial land, historical consumption data available for such land Countywide and in each MSA were used. On this basis, average consumption of industrial land during the periods 1994-1998, 1998-2000, 2000-2001, 2001-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, and 2007-2008 was used to project the annual absorption rate for the next seventeen years. In MSAs where definitional or data compatibility issues are encountered, appropriate adjustments have been made. The demand for industrial land conversion through 2025 was calculated reflecting the 2008 to 2025 time period.

Referring to Table 9, the situation with respect to industrial land supply/demand can be readily assessed. In the North Tier, MSA 1.1 has no industrial land available, but it is not considered an industrial area. Likewise, in the North-Central Tier, except for MSAs 1.3, 4.2, 4.4 and 4.6, there appears to be no candidate for additional designations of industrial land. The MSAs in the South-Central Tier mostly have small or no amounts of industrial land, and correspondingly low or no absorption rates. In particular, MSA 1.2, 5.2, 5.5, 5.7, and 6.1 have no vacant industrial land available, but the areas exhibit very low absorption rates, Thus, except for MSAs 5.5, 5.6, 5.7, and 6.1 none indicate a need for increasing the current supply. The large supply in MSA 6.2 can meet the needs in this Tier. Similarly, no MSA in the South Tier, except 7.6, shows deficient industrial land, and this far western MSA is unique in that it is almost totally outside the Urban Development Boundary, and is not a good industrial location. However, as mentioned in the section on commercial land, there is significant conversion of vacant industrially zoned land for other uses. If this conversion continues to increase, the depletion of industrial land will take place earlier than projected.

Table 9
Projected Absorption of Industrial Land
Miami-Dade County, 2008-2025

Tier and Minor Statistical Area	Vacant Industrial Land 2008 (Acres)	Industrial Land In Use 2008 (Acres)	Average Annual Absorption Rate 2008-2025 (Acres)	Projected Year of Depletion
North Tier				
1.1	0.0	0.0	0.00	--
2.1	1.8	308.7	0.00	--
2.2	0.0	159.6	0.15	2008
2.3	99.2	46.1	0.00	--
2.4	71.2	1,489.9	7.53	2017
3.1	1,262.1	1,083.6	13.43	2025+
Total	1,434.3	3,087.9	21.11	2025+
North Central Tier				
1.3	0.4	10.3	0.10	2012
3.2	1,604.4	5,253.9	66.92	2025+
4.1	2.7	163.9	0.15	2025+
4.2	14.1	760.9	2.28	2014
4.3	2.2	512.1	0.00	--
4.4	0.0	4.8	0.02	2008
4.5	33.9	107.3	0.00	--
4.6	15.5	317.4	2.06	2015
4.7	18.3	157.0	0.00	--
5.1	1.4	51.7	0.00	--
Total	1,692.9	7,339.3	71.53	2025+
South-Central Tier				
1.2	0.0	0.0	0.00	--
5.2	0.0	5.9	0.00	--
5.3	26.1	64.6	0.00	--
5.4	0.9	140.7	0.00	--
5.5	0.0	102.7	1.20	2008
5.6	0.6	13.2	0.07	2017
5.7	0.0	2.1	0.13	2008
5.8	1.8	18.1	0.00	--
6.1	0.0	12.2	0.34	2008
6.2	200.5	558.2	15.42	2021
Total	229.9	917.7	17.17	2021
South Tier				
7.1	2.2	21.7	0.00	--
7.2	164.3	286.7	3.48	2025+
7.3	41.3	147.4	2.44	2025
7.4	24.9	24.9	0.00	--
7.5	294.2	119.3	1.21	2025+
7.6	0.0	0.0	0.00	--
Total	526.9	600.0	7.14	2025+
Grand Total	3884.0	11,944.9	116.95	-- 2041

-- Insignificant Demand
Source: Miami-Dade County, Department of Planning and Zoning, Planning Division, Research Section, August 2008.

INFRASTRUCTURE AND SERVICES

The public services addressed in this section of the report are roadways, transit, water and sewer, solid waste, fire and rescue, parks and schools. Drainage is addressed in the Environmental Conditions and Considerations section of this report. Each of the services has been evaluated for current and future conditions with the impact of filed CDMP amendment applications. The time horizons for the assessment of future conditions vary somewhat among the different services because of the variability in planning time frames used by the service agencies in their functional planning and programming of capital improvements. Each CDMP amendment Application was evaluated for the possible impact on the various services as compared with the impact of the currently planned use of the site, or the adequacy of existing and future service levels in meeting the demand generated by the application.

In accordance with state requirements, the CDMP includes level of service (LOS) standards for roadways, transit, parks, water facilities, sewer facilities, solid waste, and stormwater drainage. New LOS standards, which are being developed for water supply and schools, should be adopted by 2008. These standards are used proactively by service and facility agencies as objectives to be met by their facility planning and service delivery programs. The County, in its administration of the state-mandated service "concurrency" management program also uses them reactively. The concurrency program mandates that development orders not be issued unless the necessary services are in place, or will be in place and operating at or above all adopted LOS standards, around the time the development will begin occupancy. In the evaluation of the merits or drawbacks of proposed CDMP amendments to the Land Use Plan map, each of the noted services is evaluated in terms of the adopted LOS standards using the most current information available.

Miami-Dade County's concurrency management program procedures took effect in July 1989. The affected County service agencies have developed methods for determining LOS. The DP&Z coordinates the administration and implementation of those methods. The methods used by DP&Z are parallel to those developed for concurrency regulatory determinations but are not identical in all cases. In some cases, concurrency review agencies are using relatively short-term time horizons for concurrency determinations because they are responding to immediate development permit requests and are interested in immediate conditions, or because a full update of a complex data base is not yet complete. Geographic sub-areas used for concurrency may not be identical to those used in this report for long-range countywide planning. Consequently, the evaluations of LOS made for this report are not a substitute for official concurrency determinations. In keeping with the function of long-range comprehensive planning, this report endeavors to address anticipated long-range conditions.

The LOS conditions for stormwater drainage are discussed in conjunction with flood protection in the "Environmental Conditions and Considerations" section of this report. The LOS conditions pertaining to each of the other services, and the methods that were used in developing the analysis for each Application, are described below.

A final note on services is that the CDMP is a body of broad policies adopted as a legislative, not regulatory, act of the Board of County Commissioners. The array of Plan elements and policies reflect consideration of a host of social and physical responsibilities of County government, including housing, economic growth, prudent environmental resource management, as well as service delivery policies and their fiscal implications. Accordingly, broad service implications may be considered when evaluating proposals to amend the CDMP,

in addition to whether or not a proposed Land Use Plan map amendment would meet LOS standards.

Roadways

Estimates of traffic conditions for each Application were developed using standard transportation analysis methods. For each Application, an analysis was performed to determine:

1. Current traffic conditions adjacent to the application site or within the application area (i.e. existing number of lanes and operating level of service);
2. Projected roadway concurrency conditions (i.e. level of service considering reserved trips from approved developments not yet constructed and programmed roadway capacity improvements) with and without impacts of the CDMP amendment applications; and
3. Estimated impacts generated by each application, if approved, in terms of the number of potential peak-period trips projected for both the current CDMP land use designation (and/or existing use) and the proposed CDMP land use designation, and the difference.

Key sources of information used in conducting these analyses include the Transportation Element of the Adopted Components of the Comprehensive Development Master Plan (October 2006 Edition, as amended through April 24, 2008); the Miami-Dade County Transportation Improvement Program, 2009 (May 22, 2008); the Miami-Dade Transportation Plan Update to the Year 2030, Cost Feasible Plan (November 2004); the most recent available traffic count data published monthly by the Miami-Dade County Public Works Department (PWD); The Generalized Peak Hour Two-way Volumes for Florida's Urbanized Areas published by Florida Department of Transportation (FDOT) and its most recent traffic counts data for state roadways.

Level of Service

The LOS concept is applied nationwide as a qualitative assessment of the road user's perception of the quality of traffic flow, and, therefore, the degree of traffic congestion. The LOS is represented by one of the letters "A" through "F," with "A" generally representing the most favorable driving conditions and "F" representing the least favorable. The LOS reflects the quality of flow as measured by a scale of driver satisfaction. The definitions and measures of LOS reflect a national consensus of driver quality of flow. Measures of effectiveness such as average travel speed or volume to capacity ratio have been developed to approximate these qualitative representations quantitatively. The measures used by Miami-Dade County are described below.

The roadway LOS standard adopted by the County requires that LOS conditions be measured during the "peak-period." The peak period is defined in the Traffic Circulation Subelement of the CDMP as the average of the two highest consecutive hours of traffic volume during a weekday (see pg. II-11, CDMP). Current peak-period LOS conditions for county roadways were measured based on FDOT's LOS software (LOS Plan), which is designed to replicate the procedures of the 2000 Highway Capacity Manual Update prepared by the Federal Highway Administration; The Generalized Peak Hour Two-way Volumes for Florida's Urbanized Areas, Table 4-4 of the 2002 Quality/Level of Service Handbook; and the most recent traffic count data published by FDOT for state roadways. Many different roadway and traffic characteristics are taken into consideration when using FDOT's LOS software in order to produce roadway segment specific measures of LOS. A summary of the adopted LOS standard for roadways in

Miami-Dade County (CDMP Traffic Circulation Subelement, Policy TC-1B) is shown in Table 10 below.

Table 10
Traffic Circulation Peak-Period LOS Standard

Non-FIHS Roadways					
Location	Transit Availability				
	No Transit Service	20 Min. Headway Transit Service Within 1/2 Mile	Extraordinary Transit Service (Commuter Rail or Express Bus)		
Outside UDB	LOS D-State Minor Arterials LOS C-County Roads and State Principal Arterials				
Between UIA and UDB	LOS D (90% of Capacity) or LOS E on SUMAs (100% Capacity)	LOS E (100% of Capacity)	120% of Capacity		
Inside UIA	LOS E (100% of Capacity)	120% of Capacity	150% of Capacity		
FIHS Roadways					
FIHS Facility	Location				
	Outside UDB	Inside UDB	Roadways Parallel to Exclusive Transit Facilities	Inside Transportation Concurrency Management Areas	Constrained or Backlogged Roadways
Limited Access Facilities	B	D [E]	D [E]	D [E]	Manage
Controlled Access Facilities (two lanes)	C	D	E	E	Manage
Controlled Access Facilities (four or more lanes)	B	D	E	E	Manage
	NOTE: LOS inside of [brackets] applies to general use lanes only when exclusive through lanes exist.				

Source: Miami-Dade County Comprehensive Development Master Plan, October 2006.

Notes: Constrained FIHS facilities are roadways that FDOT has determined will not be expanded by the addition of two or more through lanes because of physical, environmental or policy constraints.
Backlogged FIHS facilities are roadways operating below the minimum LOS standards, not constrained and not programmed for additional lanes in the first three years of FDOT's adopted work program or five year Capital Improvements Element.
FIHS: Florida Intrastate Highway System
UIA: Urban Infill Area--Area east of, and including NW/SW 77 Avenue and SR 826 (Palmetto Expressway), excluding the City of Islandia, and excluding the area north of SR 826 and west of I-95.
UDB: Urban Development Boundary
SUMA: State Urban Minor Arterial
*Peak-period means the average of the two highest consecutive hours of traffic volume during a weekday.

Projected levels of service for the year 2015 or the estimated buildout year were determined using a transportation planning computer model, and are expressed as a volume-to-capacity ratio (v/c ratio), which is the ratio of the number of vehicles using the road to the road capacity. The 2015 v/c ratio model output is expressed using daily volumes. Roadways for the 2015, or buildout year, highway network are rated as follows:

V/C Ratio	Level of Service
0.70 or less	LOS B or better
0.71 to 0.80	LOS C
0.81 to 0.90	LOS D
0.91 to 1.0	LOS E
1.0 or greater	LOS F

Analysis Method and Assumptions

The Miami-Dade County Metropolitan Planning Organization (MPO) adopted the Miami-Dade County Year 2030 Transportation Plan, Cost Feasible Plan, in November 2004. The 2030 Long Range Transportation Plan (LRTP) was developed to guide federal, state, and local transportation expenditures through the 25-year period. Improvements and extensions to the transportation system throughout the County are governed by this Plan. Significant transit improvement projects listed in the 2030 Cost Feasible Plan include: rapid transit facilities for the North (NW 27 Avenue), Kendall (SW 88 Street), Northeast (Biscayne Boulevard), and Douglas Road (NW 37 Avenue) Corridors. Light rail transit is planned for a downtown Miami to Miami Beach connection in the MacArthur Causeway corridor. One heavy rail extension is planned to the existing Metrorail system: the Earlington Heights Connection, from Earlington Heights Metrorail Station to the Miami Intermodal Center (MIC). Non-motorized facilities (on-road bicycle lanes, off-road greenways and trails, and sidewalks) are also included in the Cost Feasible Plan.

It is important to note that the Florida Standard Urban Transportation Modeling Structure (FSUTMS) model, used to determine the projected year 2015 or buildout year traffic impacts of the CDMP Land Use Plan map amendment applications, is the best available tool for conducting these impact assessments. However, the model was designed for large-area analyses; it uses traffic analysis zones (TAZs) as the smallest geographic units; and it uses a schematic roadway network. Because of its schematic characteristics, it will not yield the same results, as would a site or area-specific traffic model or impact analysis when evaluating specific development proposals.

The analysis also includes the estimated total PM peak-hour trip generation impacts of each application. The land use designation requested for each application is the basis for estimating the number of PM peak-hour trips that could be generated. This is then compared to the number of PM peak-hour trips projected for an existing use and/or a probable use consistent with the current CDMP land use designation of the subject property. The particular use chosen is based on the most recent use of the property, or if it is vacant, the most intense use allowed for each designation or the most likely use given the current development trend in the area. Trips generated by the proposed amendment applications are estimated from the trip generation rates or equations published in the Institute of Transportation Engineers' Trip Generation, 7th Edition (2003).

A near-term trip distribution and traffic concurrency impact analysis is also prepared for each application with the assistance of the Miami-Dade County Public Works Department. These analyses reveal any potential impacts the applications may have on near-term traffic conditions in the vicinity of the application areas, accounting for current traffic conditions, programmed near-term road improvements, and the calculated impact of other pending developments in the vicinity for which development orders have been issued. In some instances, an anticipated near-term concurrency problem to be solved by Long Range Transportation Plan improvements would be reported as well as satisfactory near-term conditions projected to deteriorate without regard for the requested CDMP amendment.

Transit Service

Transit service analyses were conducted for each CDMP Application with assistance from Miami-Dade Transit (MDT). The current transit service characteristics of each route that travels along the vicinity of each application site are described. Transit service is measured in terms of service headways and distance from the application site.

Projected transit service improvements for the year 2011 are based on:

1. Projections of the additional transit trips that would be generated from the growth of each Application;
2. Characteristics of each CDMP amendment application;
3. Miami-Dade Transit's Service Planning Guidelines for transit vehicle loading;
4. Planned improvements included in MDT's 2008 Five-Year Transit Development Program (TDP); and
5. Adopted CDMP Level of Service standard for transit (CDMP Mass Transit Subelement, Policy MT-1A).

The adopted CDMP LOS standard for transit states that the minimum peak-hour mass transit LOS for areas within the Urban Development Boundary, which have a combined resident and work force population of more than 10,000 persons per square mile shall be provided with public transit service having 30-minute headways and an average route spacing of one mile provided that:

1. The average combined population and employment density along the corridor between the existing transit network and the area of expansion exceeds 4,000 per square mile, and the corridor is 0.5 miles on either side of any necessary new routes or route extensions to the area of expansion;
2. It is estimated that there is sufficient demand to warrant the service;
3. The service is economically feasible; and
4. The expansion of transit service into new areas is not provided at the detriment of existing or planned services in higher density areas with greater need.

Relevant transit related characteristics of CDMP Land Use Plan map amendment applications are reported, such as proximity of each Application site to existing or anticipated routes, and connections of said routes with Metrorail. Regarding the CDMP-adopted LOS standard and criteria outlined above, if the future impact of each application is found to result in a combined population and employment of less than 10,000 persons per square mile, or the area already has transit service with minimum headways of 30 minutes and is projected to continue to have such service, no new transit service would be required to meet the transit LOS standard.

MDT annually updates its Ten-Year Transit Development Program (TDP). This document analyzes existing transit network conditions and identifies short-term future transit needs. The currently adopted 2008 TDP addresses the 2008-2018 time frame. A Recommended Service Plan (RSP) for 2012 has been developed to provide a guideline for replacement, expansion, and improvement of the transit system. The 2012 RSP improvements are prioritized and assigned cost estimates for implementation.

Each Application is reviewed for planned transit improvements identified for implementation in the TDP based on projected needs. Descriptions of such improvements, as relevant to each Application, are provided along with cost estimates for implementation.

Water and Sewer

Either a municipal utility or the Miami-Dade Water and Sewer Department (WASD) provide water and sewer services in Miami-Dade County. Under long-standing County policy, water and sewer service is provided to developed areas within the Adopted 2015 Urban Development Boundary and is discouraged outside the UDB. WASD, the major utility in the County, operates regional water supply and wastewater disposal systems, which serve both incorporated and unincorporated areas. WASD's water treatment plants produce 87 percent of the County's public potable water supply. The regional wastewater plants treat and dispose of over 99 percent of the wastewater treated by public utilities in the County. Programmed improvements to the WASD systems are ongoing in accordance with the Miami-Dade County Water Facilities Master Plan (2003), Wastewater Facilities Master Plan (2003), sanitary sewer Settlement Agreement with the Florida Department of Environmental Protection (FDEP), a First Partial Consent Decree and a Second Partial Final Consent Decree with the U.S. Environmental Protection Agency (EPA), and a Consent Order with the FDEP. Evaluation of sewer system capacity is based on criteria established in the first consent decree and capacity of the plants for average flow will be required, depending on the compliance status of the EPA Second Partial Final Consent Decree.

In addition to WASD's regional system, fourteen municipalities are franchised to operate a water distribution system, and eleven municipalities to operate a sewage collection system within specified service areas. Within a franchised service area, the designated utility has the responsibility of providing service, which meets the adopted LOS within the time frame of the CDMP.

<u>Water Resource Management</u>
Allocation of water resources among environmental, agricultural, and urban interests is a serious issue in South Florida. Use of the Biscayne Aquifer as a water supply source is generally no longer allowed under new rules by the South Florida Water Management District (SFWMD), unless off-setting water is returned to the aquifer in an appropriate place and quantity as determined by the SFWMD. These rules were established as a major step towards the restoration of South Florida’s natural environment including the Everglades and the Biscayne Bay Coastal Wetlands.

In 2006, Miami-Dade County adopted the *Water Use Efficiency 5-Year Plan*, and initiated several programs aimed at water conservation and at evaluating alternative water resource technologies. WASD has implemented a water conservation program aimed at reducing water

demand by over 19 million gallons per day (MGD) in the next 20 years. This plan includes: public education, the use of new water-conserving devices in all new developments, restrictions on landscape irrigation, an inclined block rate structure. Additionally, WASD has established an aggressive water loss program to reduce its "unaccounted for" water demands. This program may save as much as 14.25 MGD by 2030 through demand management activities.

In March 2007, the Miami-Dade County Board of County Commissioners adopted over $1.6 billion dollars of alternative water supply and wastewater re-use programs into the Capital Improvements Element of the CDMP. These programs account for over 70 MGD of water, and are designed to offset the water needs of anticipated growth in the WASD service area through 2030. WASD developed these programs in conjunction with the SFWMD for inclusion into the SFWMD's *Lower East Coast* (LEC) *Regional Water Supply Plan* to help secure a 20-year water Consumptive Use Permit (CUP) for the County, which was approved November 15, 2007. Additionally, the alternative water supply and wastewater reuse programs are outlined in the Miami-Dade County Water Supply Facilities Work Plan dated October 2007, with a summary of projects proposed for inclusion into the Water and Sewer Subelement of the CDMP through an amendment filed in April 2007. This plan outlines all the proposed alternative water supply and reuse/reclaimed water projects. This plan details approximately 37.5 MGD of reverse osmosis projects, 12.2 MGD of Floridan Aquifer blending projects, and 52 MGD of wastewater reuse projects.

Potable Water Facilities

The rated capacity, average daily flow, and maximum daily flow for municipal and WASD's water treatment plants are shown in Table 11 below. In addition, the Florida Keys Aqueduct Authority (FKAA) operates eleven wells that provide potable water to the Village of Islamorada, the Cities of Key Colony Beach, Key West, Layton, and Marathon, including portions of Unincorporated Monroe County. These wells, located southwest of Florida City, have 17.4 MGD annual average, and 17.4 MGD maximum day capacity (as of 02/13/07). The FKAA has a 20-year allocation for withdrawals from the Biscayne and Floridan aquifers, and is proposing to build a large-scale Floridan reverse osmosis plant to meet future need.

Table 11 below shows the rated capacity, average daily flow, and maximum daily flow for municipal and WASD's water treatment plants. These WTP facilities also have the Biscayne Aquifer as its main source for groundwater supply.

Table 11
Capacity of County and Municipal Water Treatment Plants
Miami-Dade County, 2007

Water Treatment Plant	Maximum **Permitted Raw Water Withdrawal (mgd)	Permitted Treatment Capacity (mgd)	Average Plant Production (mgd) (1)	Maximum Plant Production (mgd) (1)	Treatment Capacity Available (mgd)	Treatment Capacity Percentage Available (2)
COUNTY (WASD)						
REGIONAL SYSTEM TOTAL (3)	337.97	439.70	306.35	346.8	92.9	21.12%
Hialeah/Preston	155.40*	225.00	145.5	167.3	57.7	25.64%
Alexander Orr	182.57*	214.70	160.85	179.5	35.2	16.40%
SO. DADE SYSTEM TOTAL	8.40	12.42	6.44	10.8	1.62	13.0425.7%
Leisure City		6.48	2.26			
Newton		2.16	1.91			
Naranja		1.38	0.05			
Elevated Tank		1.44	1.48			
Everglades LC		0.96	0.74			
WASD TOTAL	346.37	452.12	312.4	357.6	94.52	20.91%
MUNICIPAL						
Florida City	3.60	3.00	2.47	3.16	-0.16	-5.3%
Homestead	15.20	14.11	11.34	12.53	1.58	11.2%
North Miami TOTAL	9.30	18.10	13.38	15.16	2.94	16.2%
Winson Plant		9.00	8.03	9.14		
WASD Delivery (4)		9.10	5.35			
North Miami Beach TOTAL	17.70	39.90	24.83	26.16	13.74	34.4%
Norwood-Oeffler		17.70	14.76	17.50		
WASD Delivery (4)		22.30	10.06			
MUNICIPAL TOTAL (5)	45.80	75.11	52.02	57.01		

(1) Production based on raw water for a 12-month period, ending June 30, 2008
(2) Percent Capacity Available is calculated as Treatment Capacity Available/Permitted Treatment Capacity.
(3) Maximum day for regional system is not sum of individual max. Days, it is the actual combined max. Day (since the individual max. days do not necessarily occur on the same day).
(4) Treated potable water is purchased wholesale from WASD and combined with water produced by the municipal plants.
(5) Includes treatment plants and interconnections
*Maximum permitted withdrawal capacity from the Biscayne aquifer through 2012** Maximum permitted from the Floridan aquifer through 2012 is 18.42 mgd.
Source: Water Treatment Plant Monthly Operation Reports submitted to Department of Environmental Resources Management, 2007.

Potable Water LOS

The adopted LOS standard for the potable water facilities requires that all federal, state, and county primary water quality standards for potable water be met; that countywide storage capacity for finished water shall be no less than 15 percent of the countywide average daily demand; that the regional system shall operate with a rated capacity no less than two percent above the maximum day flow for the preceding year and an average daily capacity 2 percent above the average daily per capita system demand for the preceding 5 years. In addition, the LOS standard mandates that water be delivered to users at a pressure no less than 20 pounds per square inch (psi). Unless otherwise approved by the Miami-Dade Fire Department, minimum fire flows must be maintained for specified land uses as shown in Table 12 below. All public water systems are currently meeting the adopted LOS for potable water.

Table 12
Water Distribution Level of Service Standard for Minimum Fire Flows

Land Use	Fire Flow Delivered at 20 PSI (gallons per minute)
Business and Industry	3,000
Hospitals, Schools	2,000
Multi-family Residential; Semiprofessional Offices	1,500
Single Family and Duplex; Residential on minimum lots of 7,500 square feet	750
Single Family Residential; Estate Density	500

Source: CDMP Adopted Components, Water, Sewer, and Solid Waste Element, 2006
Miami-Dade County, Florida

In an effort to better manage water supplies and to ensure that the LOS is maintained, WASD is developing an allocation system to track the water demands from platted and permitted development. This system will correspond to the allocation system currently being used by DERM for wastewater treatment facilities, and will require all development to obtain a water supply allocation letter from WASD stating that adequate water supply capacity is available for the proposed project. WASD's water allocation system is anticipated to be operational in January 2009.

Potable Water Status

WASD's regional network of water mains currently runs from the Broward County line on the north to approximately SW 248 Street on the south, the Hialeah-Preston Water Treatment complex serves the area north of Flagler Street and the Alexander Orr Water Treatment Plant serves the area south of Flagler Street. The network connects the regional plants to all of the municipal systems between these boundaries. South of SW 248 Street, the unincorporated area is served by the South Miami-Dade Water System, which consists of several small plants formerly operated by Rex Utilities.

At the current time, all water treatment plants are operating within the adopted LOS. In anticipation of future development in the Everglades Labor Camp and Newton wellfield service area, WASD has programmed extensive new distribution systems in the South Dade subarea to interconnect the Newton and Everglades Labor Camp wellfields to the new 20 MGD South Miami Heights wellfield. These new distribution lines are anticipated to come on line in 2012 when the South Miami Heights wellfield is operational. WASD is currently designing an upgrade to the Everglades Water Treatment Plant and distribution system to provide additional flow capacity to this service area.

Wastewater

WASD operates three regional wastewater treatment plants in the North, Central, and South Districts. Because the system is interconnected, the service districts, shown in Figure 5 below, have flexible boundaries, and some flows from one district can be diverted to other plants in the system. During 2007-2008, the total WASD regional system capacity is 368 mgd, and the annual average daily flow treated at the three plants totaled 304.91 mgd (twelve month period ending May 2008), or 82.86 percent of the design capacity of the regional system (See Table 14

on page 37 below). There has been a significant reduction in average flow into the regional system as the result of extensive infiltration and inflow prevention work.

As the result of enforcement actions brought against Miami-Dade County by the State of Florida Department of Environmental Protection and the United States Environmental Protection Agency, Miami-Dade County agreed to construct more than $1.169 billion worth of improvements to its wastewater treatment plants, transmission mains and sewage lines. Major improvements included construction of a new Biscayne Bay sewer line, a force main interceptor at Flagler Street, a South Miami-Dade transmission main and new mains in North Miami-Dade. Construction of the Biscayne Bay sewer line was completed in August 1994.

Table 13
County and Municipal Wastewater Treatment Plant Capacity

Waste Water Treatment Plant	Average Flow Design Capacity (mgd)	12 Month Average* (mgd)	Flow as Percent of Design Capacity	Long-Term Programmed Capacity (mgd)	Effluent Disposal
WASD					
Central District WWTP	143.00	115.00	80.42%	143.00	Ocean Outfall
North District WWTP	112.50	91.39	81.24%	174.80	Ocean Outfall & Deep Well Injection
South District WWTP	112.50	98.53	87.58%	311.00	Deep Well Injection
Regional System Total	368.00	304.91	82.86%	628.80	
Municipal Plants					
Homestead	6.00	6.13	102.17%	6.00	Ponds & Trenches

Source: Department of Environmental Resources Management, 2008
* Twelve month period ending April 30, 2008

Wastewater Facility LOS

The County's adopted LOS standard for wastewater treatment and disposal requires that the regional wastewater treatment and disposal system operate at a capacity which is two percent above the average daily per capita flow for the preceding five years and at a physical capacity of no less than the annual average daily sewer flow. The wastewater effluent must also meet all applicable federal, state, and county standards and all treatment plants must maintain the capacity to treat peak flows without overflow.

Wastewater Facility Status

Currently, all of WASD's wastewater treatment plants have capacity to treat and dispose wastewater flows demands. None of the three regional treatment plants are at or exceed the LOS standard set for the County.

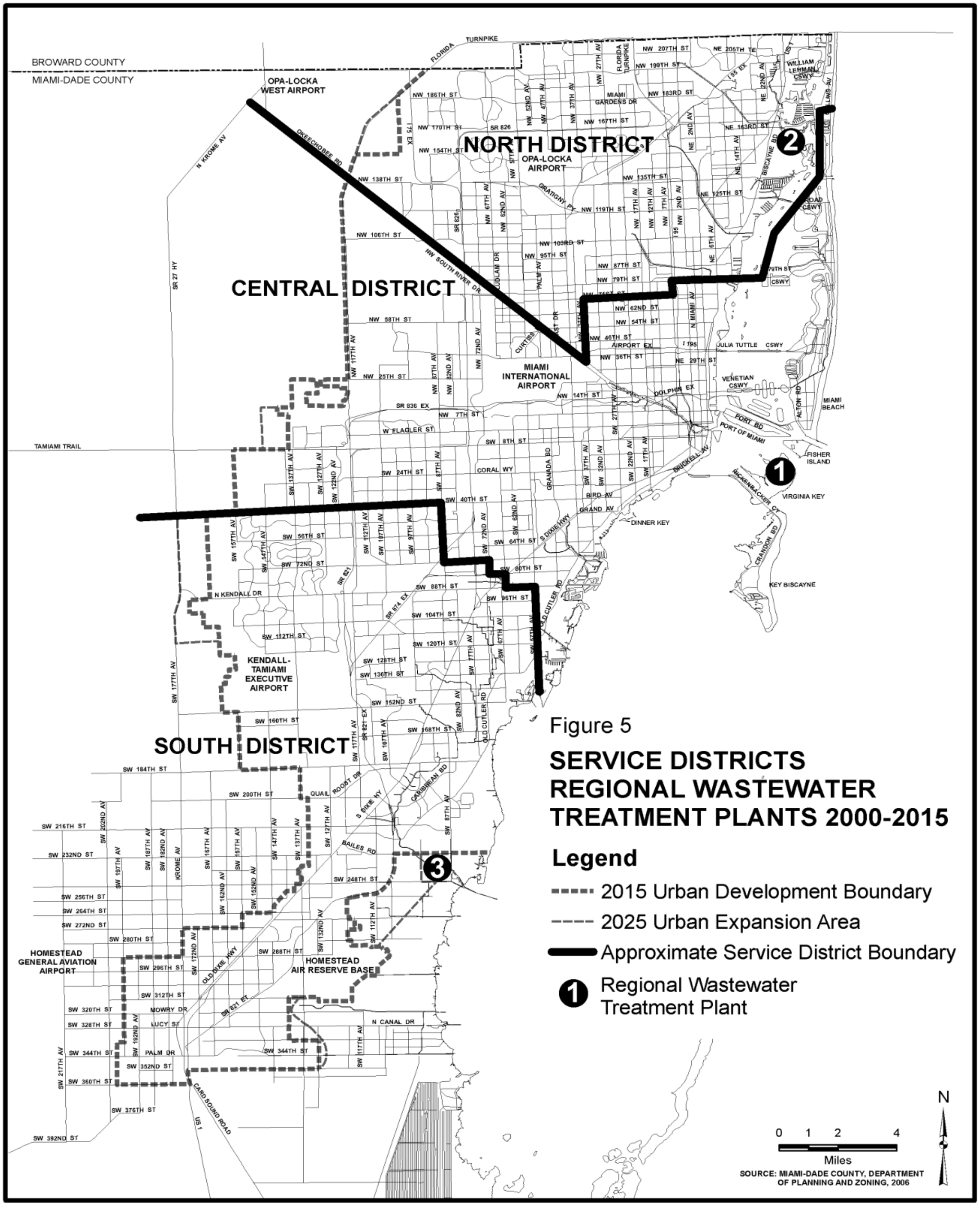


Figure 5
SERVICE DISTRICTS REGIONAL WASTEWATER TREATMENT PLANTS 2000-2015

However, some of WASD's collection/transmission facilities have limited available capacity; consequently, approval of development orders which will generate additional wastewater flows are being evaluated by DERM on a case-by-case basis. Approvals are only granted if the Application for any proposed development order is certified by DERM to comply with the provisions and requirements of the Settlement Agreement between Miami-Dade County and the State of Florida Department of Environmental Protection and with the provisions of the Environmental Protection Agency Consent Decree. Furthermore, in light of the fact that the County's sanitary sewer system has limited sewer collection/transmission and treatment capacity, no new sewer service connections can be permitted until adequate capacity becomes available. Consequently, final development orders for new construction may not be granted unless adequate capacity in the sanitary sewer collection/transmission and treatment systems is available at the point in time when the project will be contributing sewage to the system or if approval for alternative means of sewage disposal can be obtained. Use of an alternative means of sewage disposal shall be an interim measure, with connection to the public sanitary sewer system required upon availability of adequate collection/transmission and treatment capacity. Miami-Dade County has completed treatment plant expansion projects, which will ultimately increase total treatment plant capacity to 375.5 MGD. A total of 884 wastewater transmission system projects, consisting of 659 pumping stations and 225 force mains, have been identified for compliance with the Consent Decree between the county and the Environmental Protection Agency. As of March 31, 2008, 817 projects have been completed, consisting of 604 pumping stations and 213 force mains.

Evaluation of Application Impacts on Water and Sewer

Although specific requirements under Chapter 24 of the Code of Miami-Dade County vary with land use, most new development in Miami-Dade County is required by Chapter 24 and CDMP policy to connect to the public water or sewer system, or to both. The timing of new development is heavily dependent on the availability of service connections. Where water and sewer lines do not exist and are not programmed, the necessary service connections may be provided by the developer. When construction is completed, the facilities are donated to the utility.

The proximity of an Application site to existing or programmed water and sewer lines is an important asset or constraint, which can influence the feasibility of a site's development. For this reason, the location of the nearest adequate water and sewer main connections is identified for each Application. Additionally, the adequacy of available water and sewer system capacity has been evaluated by DERM and WASD for each Application.

In evaluating proposals to amend the Land Use Plan map, expected changes in water demand and wastewater generation that would result from the different land uses are estimated. This can be done only in a general way because each of the CDMP Land Use Plan map categories allows a variety of land uses to be approved. For example, the Industrial and Office category allows warehousing which creates little demand for water; and also allows office buildings, restaurants, and manufactures, which could be large water users. For purposes of estimating water demand or sewage generation, typical land uses for each land use classification are assumed.

Solid Waste Management

The Miami-Dade Department of Solid Waste Management (DSWM) oversees the proper collection and disposal of solid waste generated in the County through direct operations, contractual arrangements, and regulations. In addition, DSWM directs countywide effort to comply with State regulations concerning recycling, household hazardous waste management and closure/maintenance of solid waste sites no longer in use.

Collection Services

The DSWM provides collection services to residential units in the unincorporated service area and several municipalities. The Department also operates 13 Neighborhood Trash and Recycling Centers for single-family residents of the waste collection service area to drop off yard trash, bulky items, waste tires, end-of-life electronics, used oil and white goods; permitted landscapers can drop off clean yard trash for a fee.

Although the DSWM offers collection services to commercial and multi-family establishments, most commercial and multi-family establishments throughout the County hire permitted private haulers. Private haulers purchase permits and vehicle decals in order to haul solid waste on County roads. Municipalities, outside of the DSWM waste service area, either operate their own solid waste collection departments or contract with permitted private haulers for single-family residential waste collection service. The DSWM provides waste collection service to the municipalities of Aventura, Cutler Bay, Doral, Miami Gardens, Miami Lakes, Palmetto Bay, Pinecrest, Sunny Isles Beach, and Sweetwater.

Disposal System

The County maintains three major solid waste disposal sites including the Resources Recovery Facility, the South Miami-Dade Landfill, the North Miami-Dade landfill and three regional transfer stations at 18701 NE 6 Avenue, 1150 NW 20 Street, and 2900 SW 72 Avenue respectively. Solid Waste is received at the three disposal facilities and three transfer stations from County collection operations, municipal collection operations and permitted private haulers. The County also contracts for landfill space with a private solid waste enterprise for disposal of a portion of the County's waste tonnage. The waste received at the Transfer Stations is loaded into transfer trailers and transported to the County's major disposal sites or the contracted disposal site. The primary uses of the transfer stations are to reduce hauling time and distance between collection sites and disposal sites, and to enable the DSWM to manage the waste deliveries to fulfill contract obligations at the Resources Recovery facility and the contracted disposal site. In FY 07-08, The Miami-Dade DSWM disposal operation is projected to receive 1.857 million tons of solid waste.

The Resources Recovery Facility at 6990 NW 97 Avenue is projected to receive 1,221,000 tons of waste in FY 07-08. This facility includes a garbage processing section, a trash processing section, an electrical generating facility, and related support structures to shred waste tires and to recover aluminum, ferrous metals and other non-ferrous metals for recycling. Incoming waste is divided into two waste streams: On-site waste is shredded to produce refuse derived fuel (RDF) and is burned to generate high-pressure, super-heated steam that runs turbine generators for the production of electricity; and Recycling Trash Improvement (RTI) to produce biomass fuel for use as an alternative fuel at electrical generating plants off-site. With the production of biomass fuel and the recovery of metals, approximately 213,000 tons of recyclable material is currently being recovered from this facility annually.

The South Dade Landfill is located on a 230-acre site at 24000 SW 97 Avenue. This facility is permitted as a Class 1 landfill. Currently, Cells 1 and 2 are closed, Cell 3 is being closed, and Cell 4 is open for disposal of solid waste. Cell 5 is currently in the design phase. The State of Florida Department of Environmental Protection must approve this phase before a construction contract is awarded. Approximately 405,000 tons of waste is projected to be disposed of at this facility in FY 07-08. In total, the South Miami-Dade Landfill is expected to provide approximately 7.1 million tons of remaining disposal capacity in Cells 4 and 5. The North Dade Landfill is located on a 268-acre site at 21500 NW 47 Avenue. Approximately 215,000 tons of trash is projected to be disposed of at this landfill during FY 07-08. There is approximately 2.1 million tons of additional disposal capacity remaining at this site.

In addition to the County's three disposal facilities, the County maintains a disposal service contract with Waste Management, Inc. (up to 500,000 tons per year for 20 years, ending FY 14-15, with two five-year options to renew). This arrangement allows for flexibility in the amount delivered, permitting the County to maintain adequate capacity and meet concurrency requirements.

Recycling

Curbside recycling for single-family residences in unincorporated Miami-Dade County is transitioning from dual program implemented in FY 90-91 to a new single-stream program that will be fully operational in FY 08-09. The new program uses two contractors to collect materials (World Waste Services of Florida Inc., to collect in the North and Central parts of the county and Waste Services of Florida, Inc., to collect in the southern portion of the county), and one contractor (Waste Management, Inc.) to process materials. The DSWM also provides recycling services to the nine municipalities (Aventura, Cutler Bay, Doral, Miami Gardens, Miami Lakes, Palmetto Bay, Pinecrest, Sunny Isles Beach and Sweetwater), which are part of the DSWM waste collection service area.

Eleven other municipalities participate with the County through Interlocal Agreements for the current curbside recycling service. It is anticipated that they will contract for the new program as well. These eleven municipalities are: El Portal, Florida City, Medley, Miami Beach, Miami Springs, North Bay Village, Opa-Locka, South Miami, Surfside, Virginia Gardens and West Miami. The remaining municipalities in Miami-Dade County offer recycling services to their residents either by curbside municipal service or contracts with permitted private haulers. As of 1992, commercial and multi-family establishments are required by County ordinance to provide for a recycling program, and the DSWM is currently enhancing the proactive enforcement of these laws.

Level of Service Standard

The adopted level of service standard for the County Solid Waste Management System is as follows: to maintain sufficient waste disposal capacity to accommodate waste flows committed to the System through long term contracts or interlocal agreements with municipalities and private waste haulers, and anticipated uncommitted waste flows, for a period of five years. As of FY 07-08, the DSWM is in compliance with our adopted LOS.

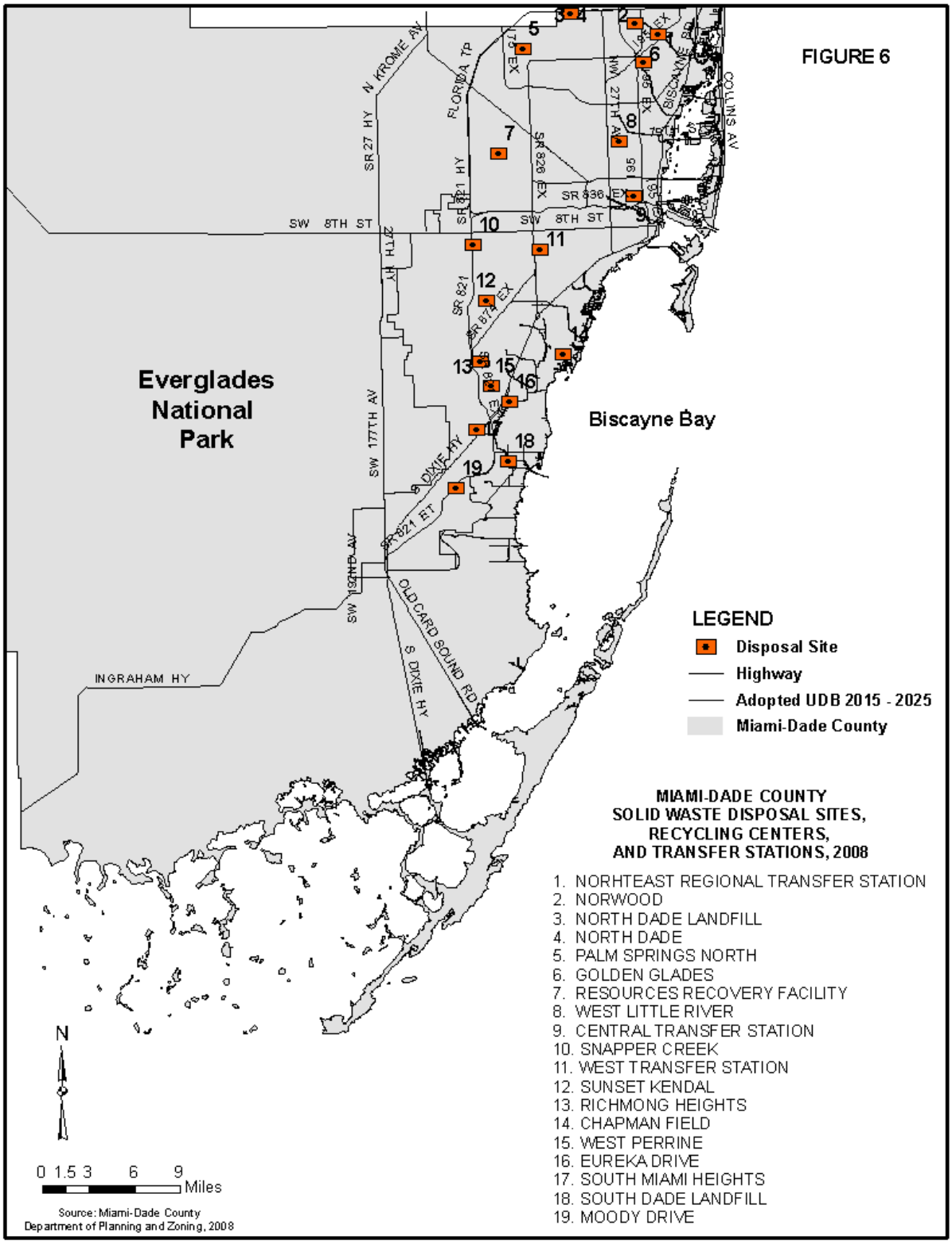


FIGURE 6
Everglades National Park
Biscayne Bay
N KROME AV
SR 27 HY
FLORIDA TP
SR 821 HY
SR 826
SR 836
SW 8TH ST
SW 177TH AV
SR 821
SR 821 ET
S DIXIE HY
SW 152ND AV
OLD CARD SOUND RD
INGRAHAM HY
LEGEND
Disposal Site
Highway
Adopted UDB 2015 - 2025
Miami-Dade County
MIAMI-DADE COUNTY
SOLID WASTE DISPOSAL SITES,
RECYCLING CENTERS,
AND TRANSFER STATIONS, 2008
1. NORHTEAST REGIONAL TRANSFER STATION
2. NORWOOD
3. NORTH DADE LANDFILL
4. NORTH DADE
5. PALM SPRINGS NORTH
6. GOLDEN GLADES
7. RESOURCES RECOVERY FACILITY
8. WEST LITTLE RIVER
9. CENTRAL TRANSFER STATION
10. SNAPPER CREEK
11. WEST TRANSFER STATION
12. SUNSET KENDAL
13. RICHMONG HEIGHTS
14. CHAPMAN FIELD
15. WEST PERRINE
16. EUREKA DRIVE
17. SOUTH MIAMI HEIGHTS
18. SOUTH DADE LANDFILL
19. MOODY DRIVE
N
0 1.5 3 6 9
Miles
Source: Miami-Dade County
Department of Planning and Zoning, 2008

Fire Rescue

The Miami-Dade Fire Rescue Department (MDFR) provides emergency response and transport services, which encompass fire suppression, Advanced Life Support (ALS) and Basic Life Support (BLS) emergency medical services, hazardous materials mitigation, disaster management, and other specialty services. MDFR provides daily 24-hour emergency response service to over 1.6 million residents, businesses and visitors through 113 rescue and suppression units strategically located in 64 fire-rescue stations within unincorporated Miami-Dade County and 30 municipalities.

During fiscal year 2007, MDFR responded to over 229,000 emergencies, and completed 60,602 transports, equating to 36% of the 168,911 medical incidents responded to during FY 2006-2007. MDFR has added 21 new units in the last five years, and completed construction and/or major renovation of eight stations.

Service Level Factors

One of the most critical factors in any emergency incident is response time, which is measured from the time an alarm is received by 911 to the time the first unit arrives. Major variables affecting response time are station alarm activity and travel time from the station to the incident. The busier a local station, the less likely those units will be available to respond, increasing the probability that a unit from a surrounding station will be dispatched. As a result, travel time to the incident will likely be increased. Another major factor affecting travel time is location. The distance from a station, as well as poor, congested or discontinued roads will increase travel time. These factors adversely impact the travel time of the first arriving unit, as well as those of other units responding on multiple-unit assignments, such as structure fire alarms. In areas of intense land use, the location of stations should facilitate several units working in tandem. Furthermore, MDFR's vast territory, with over 60% of service area outside of the UDB, tends to exacerbate response times. The use of traffic calming devices such as barricades, speed bumps, and lane narrowing obstructions also increases travel times.

To address the service level factors, MDFR uses key comparative data for future decision making in planning the direction and growth of the department in terms of additional units and services. Trends and historical information serve as the foundation for future implementation. In fiscal year 2005, MDFR began using the DECCAN Modeling System, a fire station location analysis computer software program that allows for retrieval of alternate deployment scenarios, identification of color-coded workload and response performance trends.

The software allows for the establishments of parameters against defined target goals for service delivery as recommended by National Fire Protection Association (NFPA) standard 1710 and established by the Department. The DECCAN software was used to compile a five-year service plan and analyze long-term service delivery gaps based on projected residential population growth and call volumes in planning for future units and services. Additionally, recent enhancements to the Computer Aided Dispatch (CAD) system allow for more automated dispatching of fire-rescue calls to the nearest available unit using Automated Vehicle Location (AVL) capabilities which will minimize service delivery gaps and thus reduce the response time of first units arriving to an emergency scene.

Based on the five year service plan, the DECCAN software, and the enhancements to the CAD system, MDFR, in its 2005-2006 and 2006-2007 Business Plans, is committed to reducing response time within and outside the UDB by opening new stations, placing additional units in

service and routing fire rescue calls to the nearest available unit. Figure 7 on page 47 below illustrates travel times for fiscal year 2006-2007 to life-threatening emergencies and structure fires. It is projected that planned new stations and/or services and the enhanced dispatch capability will improve travel times in those area that are currently above targeted travel times.

Service Enhancements

MDFR continues its aggressive expansion in meeting the service demands as a result of development and population growth within the Fire District.

During fiscal year 2005-2006, MDFR deployed ALS Engine 61 to serve the Trail area along SW 152 Street. During that period, Rescue 70 was deployed to serve the area along SW 248 Street. During fiscal year 2006-2007, MDFR completed the construction of four stations; Trail Station 61 located at 15155 SW 10 Street; Highland Oaks Station 63 located at 1655 NE 205 Terrace; East Homestead Station 65 located at 1350 SE 24 Street; and Villages of Homestead Station 66 located at 3100 SE 8 Street.

MDFR continues to implement a plan to enhance rescue capabilities by annually upgrading Basic Life Support (BLS) suppression units to Advanced Life Support suppression units staffed with two paramedics and two Emergency Medical Technicians and supplied with critical medical care equipment. These ALS units respond to both fires and life-threatening emergencies.

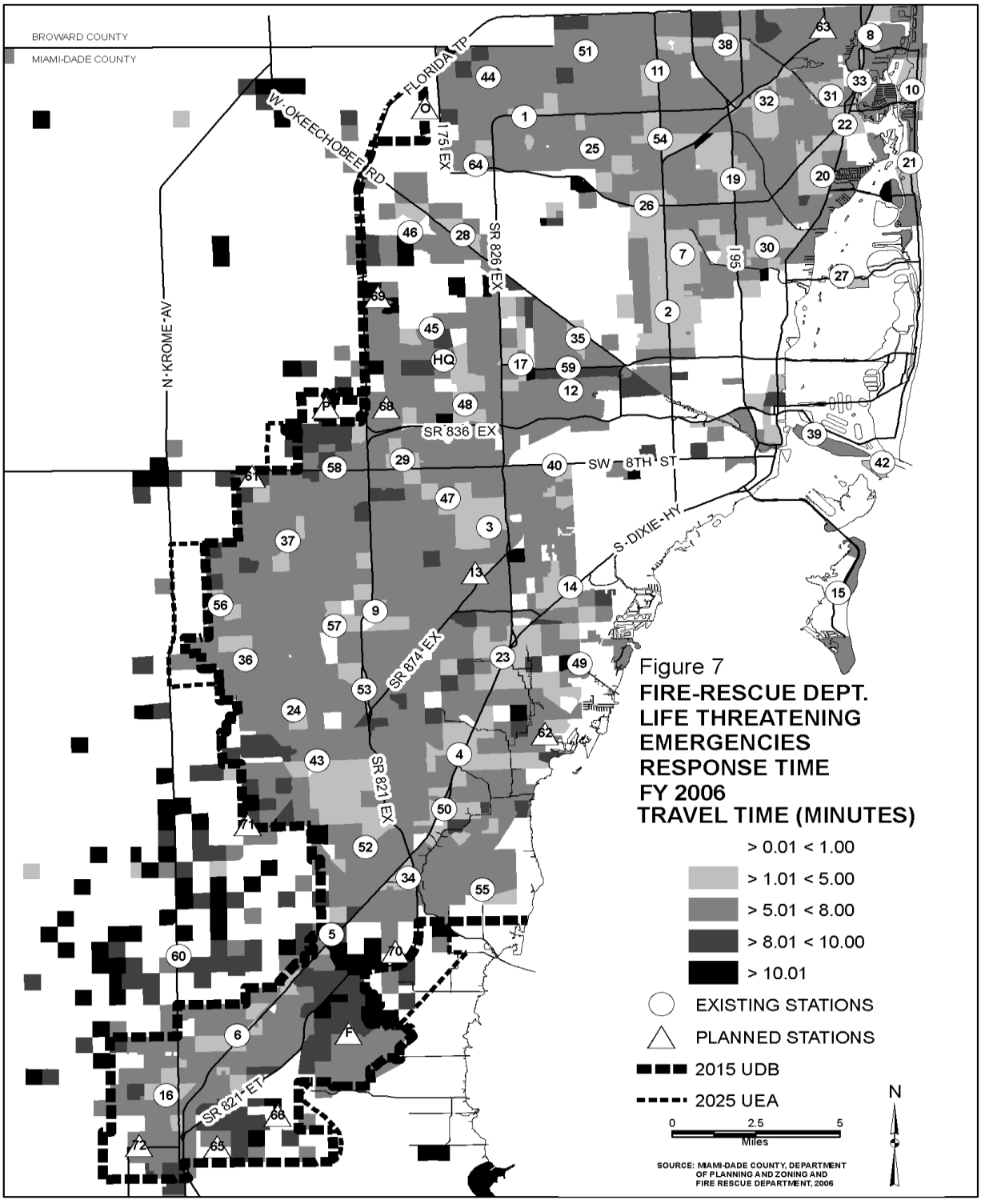
During fiscal year 2006-2007, MDFR deployed ALS Engine 66 to serve the East Homestead area along with Rescue 69 to serve the area of Doral. Furthermore, during that period, MDFR deployed Fireboat 1 and Fireboat 2 into service. In 2007, MDFR implemented a new Squad program to provide Basic Life Support transport. The Squad program has been a positive addition by enhancing efficiency in the manner that MDFR transports BLS patients. MDFR will continue to add units until we meet our goal of fourteen (14) Squads.

During fiscal year 2007-2008, MDFR completed the construction of the East Kendall Station 13. The newly constructed station will be equipped with an ALS suppression unit. To enhance level of service, additional rescue units will be placed in Sage Bay Station 55, Redland Station 60, Trail Station 61, and Village of Homestead Station 66.

Relocation of temporary Miami Lakes West Station 64 to permanent new Station 64 is scheduled for completion in fiscal year 2009-2010. Completion of Arcola Station 67, Dolphin Station 68, and Coconut Palm Station 70, are also scheduled for that same fiscal year. Placing additional rescue units in East Kendall Station 13, Virginia Gardens Station 17, and Hammocks Station 36 will further enhance rescue response.

During fiscal year 2010-2011, MDFR plans to complete the reconstruction of the Sunny Isles Beach Station 10, North East Station 18, Palmetto Bay South Station 62, Phase II of Highland Oaks Station 63, and Doral North Station 69. ALS Engine 62, temporarily located at Station 50, will be relocated to the newly reconstructed Station 62. To enhance level of services, additional suppression units will be placed in Sunny Isles Beach Station 10, and Perrine Station 50. An additional rescue unit will be placed in Interama Station 22 to maintain the same level of service once Rescue 63 is moved from Station 22 to Station 63, Phase II.

Eureka Station 71, Florida City Station 72, Beacon Lakes Station, and Homestead Air Force Base Station are planned for fiscal year 2011-2012 as well as an additional ALS suppression unit for Coconut Palm Station 70.


BROWARD COUNTY
MIAMI-DADE COUNTY
FLORIDA TP
W OKEECHOBEE RD
I75 EX
SR 826 EX
I95
N KROME AV
SR 836 EX
SW 8TH ST
S DIXIE HY
SR 874 EX
SR 821 EX
SR 821 ET
HQ
Figure 7
FIRE-RESCUE DEPT.
LIFE THREATENING
EMERGENCIES
RESPONSE TIME
FY 2006
TRAVEL TIME (MINUTES)
> 0.01 < 1.00
> 1.01 < 5.00
> 5.01 < 8.00
> 8.01 < 10.00
> 10.01
EXISTING STATIONS
PLANNED STATIONS
2015 UDB
2025 UEA
0 2.5 5
Miles
N
SOURCE: MIAMI-DADE COUNTY, DEPARTMENT OF PLANNING AND ZONING AND FIRE RESCUE DEPARTMENT, 2006

Park and Recreation

Information contained in the text, tables and figures of this section is based on 2007 data. The 2008 data necessary to update this section was not available at time of printing.

Miami-Dade County residents benefit from a variety of parks offered by many different providers. Each provides a type of recreation and parkland, facilities, and services that are consistent with the provider's policies and service population needs. Within Miami-Dade County, recreation and open spaces include federal parks and preserves, state parks, water conservation areas, and County and municipal parks. As of August 2006, there are a total of 794 recreational facilities and open space areas, of which 22 are under federal and state jurisdiction, 260 parks are under County jurisdiction and 512 parks are under municipal jurisdiction. Total park acreage in Miami-Dade County is 1,230,646 acres (see Table 14 below). Several County parks were lost due to conveyance of parks to newly incorporated communities in 2005.

Table 14
Countywide Recreation & Open Space Areas

Jurisdiction	Miami-Dade County		Municipal		State/ Federal		Total	
	Sites	Acres	Sites	Acres	Sites	Acres	Sites	Acres
TOTAL	260	12,636	512	4,272	22	1,213,738	794	1,230,646

Source: Miami-Dade County Park and Recreation Department Parks Property Management Information System 2/2007

The Miami-Dade County Park and Recreation Department (MDPR) provides recreation and parkland, facilities and services to Miami-Dade County in two primary ways. First, the MDPR provides local recreation open space for Unincorporated Municipal Service Area (UMSA) residents who comprise about 55 percent of the County's population. Second, the County provides countywide recreation open space for both UMSA residents and residents of the 35 municipal areas. Typically, the MDPR does not provide local park services to municipal residents unless an intergovernmental agreement exists, and then such services would be limited.

MDPR countywide parks are large and diverse and include such areas as beaches, natural area preserves, historic sites, and unique places such as Miami-Metrozoo. Local parks are commonly much smaller and in the form of neighborhood, community and district properties. At present, the MDPR offers 77 countywide parks and 183 local parks. Additional local recreation open spaces available for public use also include recreation facilities within public schools, colleges, universities, as well as privately owned local recreation open spaces within homeowner association areas.

The inventory of MDPR recreation open space sites and acreage varies annually according to incorporations, land acquisitions, and transfer of maintenance responsibility to other County departments or government entities.

MDPR operates and maintains a system of 12,636 acres of parkland that includes the two categories of countywide and local parks, as well as County-owned Environmentally Endangered Lands that are adjacent or contiguous to MDPR properties and managed as County parks. Of the 12,636 acres mentioned above, 578 acres are part of the EEL program. Countywide parks serve all residents and tourists, while local parks serve UMSA residents.

Within these two general categories, County parks are further classified based on their primary function, size, and degree of facility/program development. The characteristics of the various classes of parks are summarized in Table 15 below.

Table 15
Recreation & Open Space Classifications

Countywide					Local				
Criteria	Metropolitan	Natural Area Preserves	Greenway	Special Activity	District	Single-purpose	Community	Neighborhood	Mini Park
Primary Orientation	Resource	Resource	Resource	Resource	User	User	User	User	User
Staff	Yes	Varies	No	Yes	Yes	Yes	Yes	No	No
Available Programs	Varies	Varies	No	Yes	Yes	Yes	Yes	No	No
Acres	Varies	Varies	Varies	Varies	200 +	Varies	20-100	1-10	½
Service Area	County-wide	County-wide	County-wide	County-wide	5 miles	3 miles	3.5 miles	1 mile	.5 mile

Source: (1) Miami-Dade Parks and Recreation Department, July 2006
(2) Miami-Dade Park and Recreation Areas- Summary of Park Classification, July 2006

Countywide Parks

Countywide parks support the recreational needs of incorporated and unincorporated area residents and tourists that can only be accommodated within larger, resource-based parks. They serve large populations and draw users from great distances. Countywide parks provided by the County include Metropolitan Parks, Natural Area Preserves, Special Activity Areas, and Greenways.

Metropolitan Parks are large resource-oriented parks. Generally, these parks preserve valuable natural and historical resources while providing a broad mix of resource-dependent recreation opportunities. They typically include prominent water features. For example, Crandon Park provides numerous compatible recreational activities to park users, while at the same time preserving 343 acres of coastal wetland and 48 acres of coastal hammock as natural areas.

Natural Area Preserves are ecologically unique, resource-based parks that are often minimally improved with interpretive facilities and trails. Examples include Castellow Hammock Preserve, Nixon Smiley Pineland Preserve, and the R. Hardy Matheson Preserve.

Special Activity Areas vary greatly, but they typically are large and provide a unique recreational opportunity centered on a single theme. Miami-Metrozoo and Redland Fruit and Spice Park illustrate the diverse nature of Special Activity Areas.

Greenways are linear open spaces that provide a select range of recreation and conservation activities. Greenway parks include horse trails, bike paths, canoe trails, and conservation corridors that often link parks and other public facilities. Greenways are specialized recreational facilities that often include linear modes of transportation or a natural feature such as a trail, canal, or stream.

As shown in Table 16 below, 702,591 acres (57%) of the countywide recreational open space in Miami-Dade County is located within the boundaries of two national parks: Everglades National Park with 521,591 acres and Biscayne National Park with 181,000 acres. Federal and State Conservation Areas account for 509,528 acres (42%). State Parks and other state owned recreation areas account for 1,619 acres (<1%) of countywide parkland. County and municipal countywide park land account for approximately 11,632 acres (<1%).

Table 16
Countywide Recreation & Open Space Inventory

Park Class	Miami-Dade County Sites	Miami-Dade County Acres	Other Govt. Sites	Other Govt. Acreage	Total Sites	Total Acres
National Parks	-	-	2	702,591	2	702,591
National Preserves	-	-	2	30,302	2	30,302
State Parks	-	-	3	1,619	3	1,619
State Conservation Areas	-	-	15	479,226	15	479,226
Metropolitan Parks	15	3,925	0	0	15	4,147
Natural Area Preserves	13	1,653	1	12	14	1,665
Special Activity	25	3672	33	1,942	58	5,614
Greenways	24	185	8	21	32	206
TOTAL	77	9,435	59	1,214,996	136	1,224,431

Source: (1) Inventory of Recreation Open Spaces, Miami-Dade Park and Recreation Department, 2007
Parks Property Management Information System Database
(2) Florida Department of Environmental Protection, Division of Park and Recreation, 2006

Local Parks

Local parks are the County's functional equivalent of municipal parks and are designed to fulfill the specific recreational needs of unincorporated area residents. There are 182 local County parks totaling 3,175 acres that include District, Community, Single Purpose, Neighborhood, and Mini-Parks. There are an additional 422 local parks totaling 3,177 acres of parkland in municipalities. Local parks have smaller service populations than countywide parks, drawing users principally from surrounding residential neighborhoods and communities.

Table 17 below summarizes local parkland by park class, and differentiates between the total number of County-owned park acres and acres for other government agencies.

Table 17
Local Park Land Inventory Summary

Park Class	Miami-Dade County Sites	Miami-Dade County Acres	Other Govt. Sites	Other Govt. Acres	Total Sites	Total Acres
District	7	1,523	0	0	7	1,523
Single Purpose	12	123	28	269	40	392
Community	53	1,044	132	1,570	185	2,614
Neighborhood	78	461	87	358	165	819
Mini-Parks	32	24	175	84	207	108
TOTAL	182	3,175	422	3,177	604	5,793

Source: Inventory of Local Recreation Open Spaces, Miami-Dade Park and Recreation Dept., 2007
Parks Property Management Information System Database

District Parks are large-sized user-oriented parks that provide extensive recreational facilities and staffed recreational programs to UMSA residents living within many different communities. They also provide recreational facilities and programming to municipal residents. For example, Tropical Park is a District Park that offers swimming, picnicking, athletic fields, game courts, and supervised recreational programs to the residents living in the west-central portion of the County.

Community Parks are medium-sized user-oriented parks that provide recreational facilities and staff programming to residents living within nearby communities. These parks focus on an aggregate of neighborhoods within a three and one-half mile radius of the park. Typically, community parks include a combination of active and passive areas, tot-lots, lighted athletic fields and game courts, and a staffed recreation building.

Single-Purpose Parks are smaller sized parks, user-oriented that provide single themed recreational facilities that meet the specific recreational needs of local residential communities. Tennis, boxing, and youth athletics are examples of the recreational opportunities provided at these parks. Unlike most County parks, single-purpose parks are often operated by non-profit service organizations.

Neighborhood Parks are small-sized user-oriented parks that meet the recreational needs of individual neighborhoods, usually within one and one-half miles of the park. Most neighborhood parks are passive, un-staffed areas that typically include tot lots, multi-purpose courts, open playfields, and a picnic shelter. These facilities are generally open only during daylight hours since the facilities have no lighting.

Mini-parks are among the smallest parks, typically less than one-half acre, that provide a passive recreational setting for residents in various neighborhoods. The vast majority of mini-parks include tot-lots, walking and sitting areas, and open space. These facilities are unlit, walk-to type parks, and include a number of special taxing districts and common open spaces that are maintained by the MDPR.

Level of Service Standards

The County has adopted a LOS standard of 2.75 acres of local recreation open space per 1,000 unincorporated area residents. Local recreation open spaces includes:

- County provided district, mini, neighborhood, community, and single-purpose parks
- Portions of County-provided countywide parks that function and are designated as local parks in the implementation of the Miami-Dade Service Concurrency Management Program
- Portions of public school and public college playfields
- 50% of the recreation open space provided at private developments in the unincorporated area

As of January 2007, there were 4,218 acres of local recreation open space, including 3,174 acres of local and designated portions of countywide parks, 780 acres of public school and public college playfields, and 264 acres of privately provided open space (See Table 18 below).

As required by Chapter 163, Florida Statutes, and the Miami-Dade Service Concurrency Management Program, the Park and Recreation Department calculates the Level of Service

provided in each of the County's three Park Benefit Districts (PBDs) as identified in Figure 8. Table 18 also summarizes the Level of Service conditions by Park Benefit District as of January 2007.

Table 18
Local Recreation Open Space Level of Service, 2006-2011

Park Benefit District	Unincorporated Population (1) Plus Permitted Development	Standard @ 2.75 Acres Per 1000 Residents	Public Park Acres (2)	School Acres (3)	Private Open Space Acres (4)	Total Recreation Open Space Acreage	Surplus (Deficit) Acres	Percent of Standard (%)
1	362,281	996.27	964	282	110	1,356	360	136
2	548,494	1,508.36	1,615	418	137	2,170	662	143
3	184,370	507.02	595	80	17	692	185	136
TOTAL	1,095,145	3,011	3,174	780	264	4,218	1,801	140

Source: (1) Miami Dade Department of Planning and Zoning, January 2006
(2) Miami-Dade County Park and Recreation Department, Planning and Research Division, January 2007
(3) Miami-Dade County School Board, Site Planning Department 11/28/06
(4) Private Open Space is one-half of total private acres. Derived from LUMA code 517 1/9/07

The MDPR also estimates the Year 2011 Level of Service. This estimate relies on acreage projections of: (1) local parks expected to be purchased through impact fees; (2) pending donations, covenants, and long-term lease agreements; (3) acquisitions funded by Safe Neighborhood Park and Quality Neighborhood Initiative Bond Programs; and (4) school playfield acquisition. Table 19 below summarizes projected local recreation open space additions between the years 2006 to 2011.

Table 19
Projected Local Recreation Open Space Additions, 2006-2011

Park Benefit District	Impact Fee Acquisitions (1) (acres)	Covenanted Dedications (2) (acres)	Bond Acquisition (acres)	School Playfields (3) (acres)	Projected Total Additions (acres)
1	145	209.90	0	8	362
2	95	0	0	3	98
3	105	35.71	1.9	4	146.61
TOTAL	345	245.61	1.9	15	607.51

Source: Miami-Dade County Park and Recreation Department, Planning and Research Division, 2006 Miami-Dade County School Board, Site Planning Department, 2006

Notes:
(1) Based on approved and projected residential development.
(2) Computed in accordance with the Park Impact Fee Ordinance No. 90-95
(3) Previously approved developer dedications. Based on School Board's 2006-2010 new construction plans, and State Department of Education for 1999-2001

Table 20 below summarizes Years 2006-2011 local recreation open space levels of service. The estimates in the "Year 2011 Surplus/Deficit Acres" column in Table 20 shows that the County needs to continue to acquire more land in PBD 1 in order to accommodate the projected Year 2011 population if park impact fees, developer dedications, and new school playfields

produce the acreage. PBDs 2 and 3 will meet the needs of the projected Year 2011 population with surplus local recreation and open space acres.

Table 20
Projected 2006-2011 Local Recreation Open Space Level of Service

Park Benefit District	Projected 2011 Unincorporated Population (1) Plus Permitted Development	2006 Total Recreation Open Space Acreage (2)	2006-2011 Public Park Land Acres Addition (2)	2005-2011 School Playfield Acres Addition (3)	2011 Total Local Open Space Acres	Standard @ 2.75 Acres Per 1,000 (Acres)	Year 2011 Surplus/ (Deficit) Acres	2011 Percent of Standard
1	694,186	1,785.62	269.96	11	2,066.62	1,909.01	157.61	108.25
2	763,625	2,247.12	56.91	31	2,335.03	2,099.97	235.06	111.19
3	264,976	780.85	58.01	4	842.86	728.68	114.18	115.66
TOTAL	1,722,787	4,813.63	238.76	46	5,244.51	4,737.66	506.85	335.10

Sources: (1) Miami-Dade County Department of Planning and Zoning, Research Section, July 2006
(2) Miami-Dade County Park and Recreation Department, Planning and Research Division, January 2006
Park Ordinance (90-59), previously approved developer donations, and General Obligation Bond Acquisition: Safe Neighborhood Park Act of 1996.
(3) Miami-Dade County School Board, Site Planning Department, 2006.

Existing Plans

During FY 2006-2007, a total of 126.04 acres of local recreation open space is projected to be acquired through Park Impact Fees, Safe Neighborhood Park Bond and Quality Neighborhood Initiative Bond, School Board acquisitions, and other means (see Table 21 below).

Table 21
Programmed Recreation Open Space Acquisitions for 2006-2007

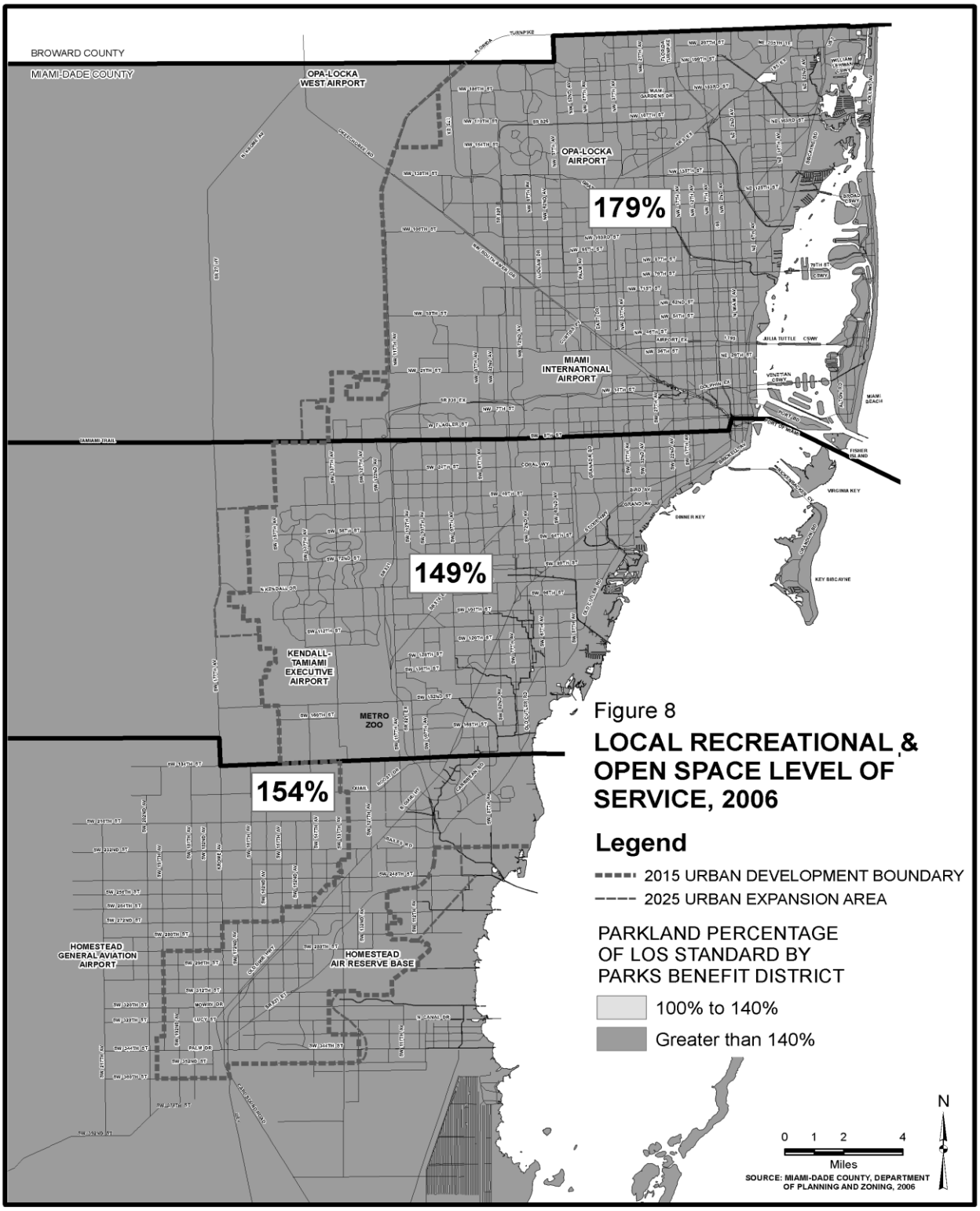
Park Benefit District	2006-2006 Public Park Land Additions [acres (1)]	2006-2007 School Playfield Additions [acres (2)]	2006-2007 Total Additions (acres)
1	77.22	9	86.22
2	0	4	4
3	33.82	2	35.82
TOTAL	111.04	15	126.04

Source: Parks and Recreation Department, Planning and Research Division, 2006

Notes:
No additional private open space acres are included.
(1) Based on Park Impact Fee Ordinance (90-59) and previously approved developer donations.
(2) Miami-Dade County School Board, Site Planning Department, 2006.

Constraints

There are a number of constraints to the Park and Recreation Department's ability to adequately acquire, maintain, and operate existing and proposed parks. These constraints include: 1) budget reductions that reduce staff's ability to manage and operate existing parks, much less new parks; 2) inadequate funding from bond and impact fees for the acquisition of neighborhood and community parks; and 3) the uncertainty of maintaining County-owned parks within areas considering incorporation.


BROWARD COUNTY
MIAMI-DADE COUNTY
OPA-LOCKA WEST AIRPORT
OPA-LOCKA AIRPORT
179%
MIAMI INTERNATIONAL AIRPORT
149%
KENDALL-TAMIAMI EXECUTIVE AIRPORT
METRO ZOO
154%
HOMESTEAD GENERAL AVIATION AIRPORT
HOMESTEAD AIR RESERVE BASE
Figure 8
LOCAL RECREATIONAL & OPEN SPACE LEVEL OF SERVICE, 2006
Legend
2015 URBAN DEVELOPMENT BOUNDARY
2025 URBAN EXPANSION AREA
PARKLAND PERCENTAGE OF LOS STANDARD BY PARKS BENEFIT DISTRICT
100% to 140%
Greater than 140%
N
0 1 2 4
Miles
SOURCE: MIAMI-DADE COUNTY, DEPARTMENT OF PLANNING AND ZONING, 2006

Public Schools

Public schools are evaluated for existing conditions, and for projected conditions after the completion of projects programmed under the Miami-Dade County School System's ongoing construction program.

Analysis Method

The adequacy of existing schools are evaluated based on the October 2007 membership of each public school, the Florida Inventory of School Houses (FISH) design capacity, which includes permanent and relocatable (portables) student stations and the FISH percent rate. Optimally, the number of students enrolled at a particular school facility should not exceed the number of permanent student stations.

The Interlocal Agreement for Public School Facility Planning (Interlocal Agreement), agreed upon by Miami-Dade County, the Cities of Miami-Dade County and the Miami-Dade County School Board, requires the reporting and reviewing of the individual applications based on FISH design capacity and percent rates. The Countywide and Planning Analysis Tiers School Facility Rates are reported using the FISH design capacity and percent rates.

On July 1, 2008, Miami-Dade County adopted a level of service standard for public school facilities, however the amendments to the Educational Element and Interlocal Agreement have not been approved and accepted by the State of Florida Department of Community Affairs. The proposed LOS standard is 100% utilization of Florida Inventory of School Houses (FISH) (with relocatable classrooms) and allows the LOS standard to be satisfied if: 1) construction of new capacity is programmed to relieve the impacted school within 3 years; 2) capacity is available at a contiguous public school facility; 3) development is phased to meet existing capacity; or, 4) if the proportionate share mitigation option is used. It is the goal of Miami-Dade County Public Schools and Miami-Dade County for all public schools facilities to achieve 100% utilization of Permanent FISH (no relocatable classrooms) by January 1, 2018. The evaluation of school capacity based upon the proposed LOS standard and concurrency methodology differs significantly from the current method of assessing the impact on schools. The current methodology requires collaboration with the Miami-Dade County School Board if the proposed development results in an increase of FISH utilization in excess of 115%. Since the concurrency level of service standards are not in effect. The Miami-Dade County Public Schools staff will evaluate the April 2008 applications utilizing the former method and will re-evaluate these applications when the new LOS standard and concurrency methodology is in place.

Existing Conditions Countywide

In October 2007, there were 315,485 students attending Miami-Dade County's 309 public schools (this excludes charter schools).

The 210 elementary schools (including primary learning centers and 10 K-8 centers) had an October 2007 membership of 155,146 and a FISH design capacity, including portables, of 169,473 for a systemwide FISH percent rate of 92 percent (See Table 22 below).

The 59 middle schools (including magnet schools) had an October 2007 membership of 62,457 and a FISH design capacity of 70,498 or a systemwide FISH percent rate of 89 percent (See Table 22 below).

The 40 senior high schools (including magnet schools) had an October 2007 enrollment of 97,882 and a FISH design capacity of 96,076 resulting in a systemwide enhanced program utilization rate of 102 percent. Among Miami-Dade County's 309 public schools, there is countywide student population of 315,485, a FISH design capacity of 336,047 and a FISH percent rate of 94 percent (See Table 22 below).

The FISH percentage rates apply to permanent student stations and relocatables. The optional situation is for the number of students enrolled in a particular facility not to exceed the number of permanent student stations. The FISH design capacity percent rates includes both permanent and portable student stations.

Current Initiatives

The state legislature passed the Growth Management Law of 2005, which made significant changes to the Growth Management Act, Chapter 163, Florida Statutes. A key requirement of the Growth Management Law of 2005 is that all local governments adopt a public school facility element and level of service standards for public school facilities in their comprehensive plan and in its public schools facilities interlocal agreement.

Miami-Dade County in 1996 adopted an Educational Element to the CDMP under provisions of the state growth management law that permitted the adoption of optional elements. The 1996 Educational Element was in response to Recommendation 9 in the Commission District 11 Area Planning Report, which was approved by the PAB on December 8, 1993 and by the Board of County Commissioners (BCC) on January 4, 1994 (Resolution No. 1-94). Recommendation 9 in the report stated, “An Education Facilities Element for the CDMP should be prepared.” The Educational Element was amended in 1999 to address the 1998 requirement of the state growth management law that require local government comprehensive plans to include criteria providing for schools proximate to urban residential areas and encouraging the collocation of schools with other public facilities such as parks, libraries and community centers. The Educational Element was further amended in 2005 as a result of recommendations in the Evaluation and Appraisal Report (EAR) that was adopted in 2003.

In July 2007, a special application was filed to amend the Educational Element of the CDMP in order to meet the legislative requirements of the 2005 Growth Management Act with regards to public school facilities. This application provides for a level of service standard for public school facilities, a school concurrency management program; and proportionate share mitigation criteria for school facilities. Subsection 9J-5.005(5) of the Florida Administrative Code (F.A.C.) requires that the local comprehensive plan be internally consistent. Thus, this application includes proposed changes to the Intergovernmental Coordination Element, Capital Improvements Element, and Preface that are related to the proposed changes to the Educational Element.

The application was transmitted to DCA in July 2007. The Board of County Commissioners adopted the application on July 1, 2008 and approved the execution by Miami-Dade County of the Interlocal Agreement for Public School Facility Planning between Miami-Dade County and Miami-Dade County Schools (ILA) which must be also be fully executed by the County and Schools and provided to DCA with the application package. Upon execution of all parties to the ILA and Notice of Intent issued by Florida Department of Community Affairs and local regulations adopted school concurrency will be in place.

Table 22
School Status by Planning Half-Tiers, Miami-Dade County, 2007

	October 2007 Enrollment	FISH Design Capacity	FISH Rate Percent	Number of Schools in Half-Tier
North East				
Elementary	26,684	30,209	88.3%	41
Middle	10,122	11,163	90.7%	10
High	17,624	17,397	101.3%	7
North West				
Elementary	18,511	18,954	97.7%	17
Middle	7,017	6,282	111.7%	6
High	11,934	11,917	100.1%	6
North- Central East				
Elementary	35,334	41,618	84.9%	56
Middle	11,280	16,032	70.4%	13
High	19,049	19,107	99.7%	10
North-Central West				
Elementary	7,972	7,792	102.3%	8
Middle	3,286	3,401	96.6%	3
High	1,413	1,764	80.1%	1
South-Central East				
Elementary	28,790	32,970	87.3%	45
Middle	13,168	13,409	98.2%	11
High	22,308	22,086	101.0%	8
South-Central West				
Elementary	19,030	18,499	102.9%	22
Middle	9,534	8,894	107.2%	8
High	17,000	15,661	108.5%	5
South East				
Elementary	11,160	12,286	90.8%	13
Middle	3,720	5,497	67.7%	4
High	2,513	3,167	79.3%	1
South West				
Elementary	7,665	7,145	107.3%	8
Middle	4,330	5,820	74.4%	4
High	6,041	4,977	121.4%	2
Total School Enrollment				
Elementary	155,146	169,473	91.5%	210
Middle	62,457	70,498	88.6%	59
High	97,882	96,076	101.9%	40
Total	315,485	336,047	93.9%	309

Source: Miami-Dade County Public Schools, October 2008
Miami-Dade Department of Planning and Zoning, 2008

CAPITAL IMPROVEMENTS ELEMENT SCHEDULE MODIFICATIONS

During each CDMP amendment cycle, some or all of the CDMP's schedules of capital improvements may be proposed for revision for a variety of reasons. During the April cycle, typically all schedules are revised. This section briefly outlines the functional capital facility programs proposed for amendment this cycle, and explains the more significant proposed amendments recommended for approval in Application No. 12 as presented in the Planning Consideration Report.

The FY 2007/08 Capital Improvements Element (CIE) adopted in April 2008 contained 589 active projects with a total cost of 20.25 billion. The largest expenditures are Transit-related projects with 35.5 percent of the total, followed closely by Water and Sewer facilities with 23.5 percent. Aviation makes up another 21.9 percent, Highways and roads just over 9.5 percent, Seaport 3.4 percent, and Park and Recreation 3.3 percent of total programmed expenditures. Aviation, water and sewer, and traffic projects have long been the dominant components of the CIE. Due to the injection of funding from the ½ cent transit surtax, as well as funding from the recent voter approved GOB program, the mass transit and park and recreation areas have increased their proportion in recent years.

The Schedule of Improvements for the FY 2008-09 proposed CIE has totals very close to those of the previous program. There are 478 active projects with a total cost of $20.21 billion and six-year programmed expenditures of $10.11 billion. Also included are 65 new projects costing $485.54 million with $407.18 million planned expenditures over the FY 2008/09 – 2013/14 period. Again, the largest share (31.0 percent of cost) of this new CIE is in Aviation followed by Mass Transit (30.1 percent) and Sewer/Water facilities (22.9 percent).

Aviation

The aviation component has consistently been one of the largest in dollar terms since the inception of the CIE process in 1988. The Miami-Dade County Aviation Department is responsible for planning and carrying out renovation and upgrading of existing, and construction of new facilities to meet current and forecasted commercial passenger, cargo, and general aviation demand at Miami International Airport (MIA), four other active airports, and one training facility.

The currently adopted CIE (April 2007 cycle) contains eight aviation projects at a total cost of $6.26 billion. About 38.2 percent is proposed for expenditure over the six-year program period, a percentage slightly higher the previous year with absolute expenditures about $378.70 million higher from the previous program cycle. During the 2007/08-budget year, $2.39 billion is programmed and many projects were carried out in the following areas: terminals, concourses, support facilities, cargo facilities, landside improvements, and airside improvements. However, by far the bulk of the program (66.3 percent) is to be found in the first category, a total of about $1,745 million. During 2007/08, key elements of the program included a new North Terminal, expansion of the South Terminal, improvements to the Central Terminal, and construction of an elevated automated people mover system known as the “MIA Mover.”

For the 2008/2009 budget year, this capital programming is being continued; i.e. terminal, concourse, and gate expansion at MIA along with cargo handling capacity increases; necessary airside and landside improvements (roads and parking) and a variety of support projects. Programmed funding has increased slightly to $2.44 billion.

Overall, the proposed April 2008-cycle Aviation Schedule of Improvements, plans expenditures of almost $2.44 billion during the six-year program period, slightly above 2007, while total cost of the program at $6.26 billion remains virtually the same. Almost all is funded from a combination of State and federal grants, revenue bond funds, current capital outlay and passenger facility charges. There are no new projects proposed, and none are being deleted.

This new schedule of improvements embodies the strategy of emphasizing future capabilities of MIA to handle expected increases in passenger and cargo operations in an efficient manner. The Aviation Department is engaged in a $6.256 billion capital improvement program to make the airport a more desirable and efficient transportation center. Flight handling capacity at MIA is being enhanced, as expansion of the south site terminal building is adding 1,825 million square-feet. The New South Terminal at MIA, with 27 gates and an adjoining cruise ship bus depot, a $1.1 billion dollar facility, started operations during the current fiscal year. The North Terminal has been partially completed and construction on the remainder facility continues with an expected completion in FY 2010-11. In addition, Concourses A and H and other components of the existing terminals with additional international and domestic gates along with renovated portions of existing concourses will give extra support to the passenger traffic from international flights. In tandem with the terminal expansions and modifications are airfield developments, ground transportation systems, and other support projects as required, including the new 8L-26R Runway. Cargo capacity with new buildings comprising a total of 2.7 million square feet is being substantially increased. In addition, the general aviation airports are undergoing a number of improvements.

Coastal Management

The Miami-Dade County Department of Environmental Resources Management (DERM) administers the coastal management program as reflected in Table 3 of the Schedule of Improvements. Its primary aim is beach restoration and preservation. The program focuses on initiating and coordinating federal and/or State projects essential to the protection and recreational viability of the County's ocean shoreline.

The adopted (April 2007/08) Coastal Management Schedule of Improvements includes only two projects at a cost of $100.93 million, with planned expenditures at $62.51 million. The total cost is much higher than the previous capital program, but the six-year expenditures are only a little over the previous year’s total. During 2007/08, only one beach re-nourishment project is to be completed at a cost of $22.0 million. The currently recommended Coastal Schedule of Improvements contains four projects with a six-year expenditure program, which has now decreased to $51.63 million and a cost of $67.52 million. There are three newly proposed projects (#s 3 through 5) and one proposed deletion (#1); the latter due to a split into the new projects #s 4 and 5. These two additions are beach re-nourishment projects, one for major capital projects and the other for maintenance, with $17.1 million planned expenditures over the FY 2008/09.

Conservation

The Conservation Element of the CDMP provides direction for the protection and conservation of Miami-Dade County's natural resources. Projects with this purpose are included in the Conservation Schedule of Improvements of the CIE, which has emphasized protection of

natural water bodies and unique endangered lands. Since the advent of the Stormwater Utility program, the focus has been heavily on major and local drainage improvements. However, as a result of changes in the Proposed Resource Allocation Plan during the previous fiscal year, the bulk of these activities are now devoted mostly to the administrative function of the program. The presently adopted program for FY 2007/08 contains 11 projects at a total cost of $272.73 million, with expenditures programmed at $106.28 million. The total cost for FY 2007/08 is $295.23 million below the previous year with a, proportionally, similar drop in the six-year expenditures by $63.85 million from the previous year. The decline in both cost and expenditures is partially a result of a program that is no longer dominated by FEMA-funded projects.

Major activity during 2007/08 includes continued acquisitions of environmentally endangered lands, as DERM offers to purchase 500 acres of such lands and provides for active restoration and preservation of wetlands and environmentally valuable uplands. A little over $10.55 million was programmed for this purpose. The Miami River dredging project continues and a small number of local drainage projects have been carried out. Of the $106.28 million to be expended during the 2007/08 – 2012/13 programming period, most was devoted to river and canal dredging and a variety of drainage improvements for the CRS program. In addition, several individual drainage projects were completed.

The April 2008 recommended program for Conservation continues these efforts at the same scale as the last year from the number of ongoing projects perspective. This is due to the transfer of drainage related activities to Public Works Department. The current program will cost $370.35 million with $73.03 million planned to be expended over the six-year period. There are nine active projects and two proposed deletions; projects 9 and 10 have been completed. There is only one proposed addition.

Drainage

The Miami-Dade County Public Works Department (PWD) has been responsible for eliminating or controlling localized stormwater drainage problems, and has an ongoing program directed to that purpose. As a result of the recommendations made during the summer of 2006, all drainage, design, and construction activities formerly housed in DERM were transferred to the Public Works Department. This includes secondary canal maintenance, street swiping, and drain cleaning funded by the Stormwater Utility program. The adopted April 2007/08 Schedule of Improvements contained 52 projects costing a total of $124.91 million, with programmed expenditures at the $75.10 million level.

As a result of the abovementioned transfer of drainage improvements activities from DERM to Public Works Department, the April 2008 recommended capital program for Drainage has total cost and programmed expenditures very similar to the levels of last year. With the drainage projects added, the proposed plan will have a total cost of $127.25 million. Over the six-year program, $75.48 million exclusively for roadway drainage improvements will be expended. There are 48 ongoing projects with six newly proposed ones. Four projects are being deleted, numbers 2, 3, 8, and 49 all due to completion.

Park and Recreation

Information contained in this section is based on 2007 data. The 2008 data necessary to update this section was not available at time of printing.

The Miami-Dade County Park and Recreation Department (MDPR) builds, maintains, operates or manages an extensive and diversified system of parks, other recreational and cultural facilities along with open spaces, to serve the people of Miami-Dade County. MDPR facilities range from tot-lots and local parks serving unincorporated area neighborhoods, to metropolitan and regional parks, golf courses, marinas, and the Miami Metrozoo that serve the entire County. Overall, MDPR manages 251 parks encompassing 12,500 acres. It also is responsible for historic sites and nature preserves.

Historically faced with huge unfunded capital needs, in recent years this situation has been somewhat relieved. This is due to the approval, late in 1996, of the Safe Neighborhood Parks (SNP) bond program and the Mayor's FY 1998/99 Quality Neighborhoods Improvement Program (QNIP). The former is exclusively for parks, while the latter also funds other local capital projects such as sidewalks and street resurfacing. Aside from these sources, the Building Better Community (BBC) Bond Program has also provided additional funding to meet the Departments' capital needs.

Utilizing these and a wide assortment of other funding sources, MDPR is proceeding with ambitious capital programs. The currently adopted FY 2007/08 capital budget and multi-year plan shows programmed expenditures at $356.51 million with a total cost of $785.59 million. During the first year, MDPR was budgeted to made improvements at several projects, the largest being the Miami Metrozoo Caribbean Exhibit and Miami Metrozoo Additional Improvements at combined expenditures of $15.46 million.

The presently recommended Park and Recreation Schedule lists 126 active projects, at a total cost of $760.50 million and programmed outlays of $369.07 million. There are 15 proposed additions, of which only five are truly new projects, numbers 142, 143, 144, 145, and 146. The remaining ten, numbers 147 through 156, had been left out in error from last year's proposal. These projects are covering a wide range of activities, most relatively small expenditures on local parks. But there are also significant improvements being made at the larger parks, the single largest outlay is at the Miami Metrozoo. Fifteen projects are being deleted. Project numbers 15, 53, 60, 72, 86, 135, and 139 have been completed. Project numbers 4, 5, 107, 123, and 131 are unfunded. Project #21 funding needs are included under park improvements and project #137 funding is reflected at the park project level. Project #114 is being deleted as it has been loaded in error into last year's program.

The FY 2007/08 capital budget and multi-year plan is 54.7 percent funded by the recent voter approved GOB program, about 14.3 percent from Safe Neighborhood Parks Proceeds, 13.2 percent from park impact fees, and 2.8 percent from Capital Outlay Reserve (COR). The remaining 15.0 percent comes primarily from State and Federal grants and financing proceeds. Of the total ongoing program, about 29.6 percent is devoted to local (UMSA) park renovations and new development, most of it to the former. More than 35.1 percent of the program is allocated to Metropolitan or areawide Parks. During FY 2008/09, MDPR plans to implement 129 park projects funded by a combination of impact fees, QNIP, and SNP dollars. About 10.0 percent of the expenditures are allocated to various improvements, renovation, repair, and maintenance efforts in other park, recreation, and cultural projects.

Seaport

The Miami-Dade County Seaport Department manages and operates the Port of Miami, which is the busiest passenger cruise home port in the world and the 12th ranked busiest containerized cargo port in the United States. The Seaport Department is responsible for meeting the infrastructure needs of the cruise and cargo industries, ensuring the Port of Miami is managed efficiently and effectively, and expanding, renovating, and maintaining the Port's facilities to meet industry growth for both cargo and cruise operations. The Department promotes cruise and cargo growth through infrastructure enhancements and throughput capacity improvements combined with aggressive foreign and domestic marketing program.

The presently adopted (2007/08) Capital Improvements Element contains a Seaport component listing a six-year expenditure program of $369.31 million and a total cost of $602.28 million. There are a total of 30 projects. The program is almost evenly loaded with 50.9 percent of the total expenditures being planned for the first three years. The single largest project in the 2007/08 capital program is dredging the southern part of Lummus Island - Phase III with a total cost of 182.42 million. Other major projects are for various infrastructure improvements, followed by the Seaport Tunnel with outlays of $106.11 million and $100.00 million, respectively. Together these three projects account for 64.5 percent of the total cost of the program. If capital costs for the new Cruise Terminal A added, just these four projects constitute almost two thirds of the FY 2007/08 capital investments.

In this, the April 2008/09 recommended Schedule of Improvements, there are 18 ongoing projects with 14 new projects being proposed, while 12 are being deleted; numbers 4, 12, 22, and 24 have been completed. Project #s 10 and 17 are listed as deletions from the program due to limited funds and other higher priority Seaport needs. Project numbers 1, 6, 8, 9, and 20 have been incorporated into new projects #s 35, 32, 33, 40, and 34, respectively. Project #7 is withdrawn as no longer needed. Project #26B is being deleted as it has been included in last year's program as a special case project.

This 2008/2009 capital program embodies continued investment in new and improved berthing, cruise terminal facilities, security, and traffic circulation enhancement and throughput projects. The six-year expenditure figure of $369.07 million is almost the same as the previous year's total, but the cost is about 26.3 percent higher from the previous year. A number of roadway improvements are being done both on and off the Port. A wide variety of infrastructure improvements have expenditures of $9.70 million. Likewise, passenger area facilities are being expanded and improved including new Terminal A and Parking Garage Terminal D projects at a combined cost of $85.06 million. Other general port improvements and channel deepening are also being accomplished. Expenditures for security measures in the form of perimeter security cameras are being made during 2008/09 as well.

For the entire six-year programming period, the Seaport identifies 44 projects with estimated cost of $506.60 million, mostly funded by Seaport revenue bonds. The total cost of these projects is $628.15 million.

Sewer Facilities

The Miami-Dade Water and Sewer Department (WASD) is the largest water and sewer utility in the Southeastern U.S., and has a major capital program to build and maintain wastewater collection and treatment infrastructure. About 99 percent of the wastewater generated in Miami-

Dade County is collected and treated by this agency, utilizing three large regional facilities with a capacity of 368 million gallons per day. WASD serves approximately 334,426 wastewater retail customers and provides wholesale sewer service to 12 municipalities within Miami-Dade County.

The currently adopted capital schedule (April, 2007/08) contains expenditures of $1,761.76 million for the period 2007/08-2012/13, with a total cost of $3,580.59 million for 33 projects. The 2007/08 program reflected continuation of the major, expedited capital program to meet the requirements and deadlines of two settlement agreements with the Florida State Department of Environmental Protection and two consent decrees with the U.S. Environmental Protection Agency. Almost all of the required improvements have been put in place and completion is now expected by 2010. During FY 2007/08, the program expenditure total is $128.53 million. The largest expenditures include $37.31 million for the South District W.W.T.P. - High Level Disinfection facilities, $13.88 for the Pump Station Improvements Program, $9.58 million for W.W. System Maintenance and Upgrades, $9.13 million for Sanitary Sewer System Extension, and $8.93 million for the South District W.R.P. Groundwater Recharge Phase I. These five projects constitute 61.3 percent of the program's first year.

For the period FY 2008/09 – 2013/14, recommended expenditures total close to $1.85 billion with the total cost at $3.36 billion for 31 ongoing projects and two proposed additions; the cost is lower than the previous year, but the expenditure level is higher. Two projects are being deleted; number 27 has been merged with project #30 while project number 31 has been left out from this year's capital program.

Over the course of the 2008-2013 six-year program period, WASD will continue to pursue a capital strategy aimed at overcoming the deficiencies specified in the Consent Decrees through a series of improvements to the wastewater collection, transmission, treatment and disposal systems. A total of 146.17 million is programmed for FY 2008/09. Many upgrades go beyond merely correcting the deficiencies identified by the State and federal governments. This is especially true at the Central and South Wastewater Treatment Plants, systemwide peak flow pumping capacity, infiltration reduction, wastewater reuse, corrosion control program, and several sewer line extensions. Primary funding for the overall program is from wastewater revenue bonds and connection charges.

Solid Waste Disposal

Miami-Dade County's Solid Waste Management Department (SWM) collects garbage and trash in unincorporated Miami-Dade County and participating municipalities. It contracts for the curbside collection of recyclable materials also. It is responsible for all trash and garbage disposal in the County and also regulates all waste collection, transportation of waste, and recycling. This service system incorporates three regional trash transfer stations, a large resource recovery plant, a shredder facility, two landfills, and thirteen-neighborhood Trash and Recycling centers. A large fleet of trucks and other equipment is maintained in order to carry out these and other activities. For its collection services, SWM has completed the conversion from a manual to automated technology.

The existing adopted capital program lists 39 projects costing $223.97 million, with $62.21 million to be expended over the 2007/08-2012/13 period. Both the cost of the program and planned expenditures are higher than the previous year. The SWM capital program, guided by

the 1995 Strategic Plan, contains projects directed at the four broad areas of Environmental Projects, Nuisance Control, Waste Collection, and Waste Disposal.

The recommended Solid Waste Management Schedule of Improvements for FY 2008/09–20013/14 has cost values lower than the previous year, but the expenditure level is much higher. There are 39 active projects with two proposed additions and five deletions. While total cost is now $207.07 million, planned expenditures are $93.37 million. Project numbers 6, 9, 17, and 20 are completed. Project #7 is moved to Public Works. The two proposed additions have a total cost of $3.05 million, the largest project being $3.00 million for Resources Recovery - New Capital Improvement Projects.

During the first three years, about 81.4 percent of the program expenditures are devoted to waste disposal environmental projects. These include Resource Recovery Plant (RRP) retrofits, cell closures (at the RRP, North, South, and Virginia Key landfills) plus other remediation projects. About 21.3 percent of the program is concerned with waste disposal. There are a number of small projects covering the full range of disposal activities. At the Resources Recovery facility, a cell is planned to be constructed at a cost of $3.85 million. Another cell (#5) is under construction at the South Miami-Dade facility. Waste collection and nuisance control constitute only about 3.2 percent of the program, the majority of it being the former. Major emphasis is being placed on improvements at existing T&R centers and the construction of a new T&R centers in West/Southwest Miami-Dade. For the most part, these projects will be completed by FY 20010/11 as more than two thirds of the funding is programmed in the first three years of the six-year plan. Major funding comes from waste disposal revenues, followed by Future Solid Waste Revenue Bonds and waste collection revenues.

Traffic Circulation

The Miami-Dade County Public Works Department is responsible for constructing and maintaining the County's roadway and bridge infrastructure system, which totals 3,311 arterial and local centerline road miles and 204 bridges on arterial and local roads. Basically, this includes many of the section-line and most half-section line roads, all collector roads, and most of the various bridges in the County. In addition, all local roads in unincorporated Miami-Dade are maintained. Capacity improvements typically consist of widening and/or reconstructing roadways, replacement of bridges and reconfiguring intersections. Countywide Street and roadway signage and signalization are also this department's responsibility.

The presently adopted (FY 2007/08) Traffic Circulation component of the CIE contained 200 projects totaling $1,414.58 million in cost. Expenditures of $1,042.66 million were heavily programmed during the first three years of the 2007/08-2012/13 period, with 67.3 percent of the outlay found there. The largest category of expenditures was for projects funded by the People's Transportation Plan (PTP) bond program at $648.88 million, which is 56.5 percent of the total for all projects. Public Works is responsible for carrying out the building of several new roads, widening many others, resurfacing, new operational improvements and new curbs and gutters as set forth in the PTP. The second largest category was for projects funded by road impact fees at $157.43 million, or about 13.7 percent of the total. The third largest category was for projects funded by the new GOB program at $89.36 million, or about 7.8 percent of the total cost. The projects include unspecified infrastructure improvements in each Commission District, several bike path projects, and a few bridge expenditures. The majority of the other projects was funded by secondary gas tax, and causeway tolls, and was applied to the usual array of road and bridge projects.

During the current year (2007/08), PWD's budget includes funding to maintain 171 bridges on arterial roads and 38 bridges on local roads, 1,100 miles of arterial and 3,933 local centerline road miles, 2,641 traffic signals and 495 school flashers, 2,584 traffic signal controllers, 21,131 streetlights on state and County roads, and approximately 400,000 street and traffic signs.

As recommended, the new 2008/09 – 2013/14 program is considerably below the prior year's program and will have a total cost of $1,083.04 million for 159 ongoing projects and 9 newly proposed ones. The six-year expenditure plan is for $792.42 million. The cost figure is well below the prior year program, as are the expenditures. Forty-one projects are listed as deletions from the program; project numbers 6, 8, 29, 41, 43, 54, 61, 69, 108, 130, 131, 132, 154, 167, 168, 171, 178, 184, and 188 being completed. Project #73 is being withdrawn as a duplicate, project #110 being transferred to Miami-Dade Transit, project #157 being moved from Public Works to Non-Departmental, and project #87 funding dollars being devoted to project #120. The remaining projects (numbers 3, 5, 19, 24, 38, 50, 78, 79, 107, 118, 125, 127, 133, 134, 170, 172, 173, and 187) are listed as deletions for several reasons, the most significant due to funding shifts or reprogramming priorities. Project #126 totals have been increased substantially. The new projects have a total cost of $46.10 million and planned expenditures of $37.33 million.

This 2008/09-2013/14 multi-year Public Works Capital plan is very similar to previous versions with inclusion of projects both countywide and in unincorporated Miami-Dade. As it did last year, following its new Business Plan, PWD has segmented the capital program into two parts: Neighborhood and Unincorporated Area Municipal Services, and Transportation. The latter is the largest component, $981.81 million in cost versus $260.97 million, while six-year expenditures are $718.98 versus $142.80 million. The Transportation part includes Causeway Improvements, Major Road Improvements, Traffic Control Systems, Infrastructure Improvements, and ADA Accessibility Improvements. The Neighborhood and Unincorporated Area Municipal Services part includes Drainage Improvements, Infrastructure Improvements, Mosquito Control (not addressed herein) and Local Road Improvements. In Transportation, the expenditures decrease throughout the six-year programming period, much less so in the Neighborhood/UMSA program, where expenditures increase in the second year and then decrease for the last four years of the six-year period.

Mass Transit

Miami-Dade Transit (MDT) is the 12th largest public transit system in the country and the largest transit agency in Florida. A large capital program is necessary for the purpose of constructing and maintaining facilities and acquiring equipment necessary to provide transportation services to the public. The transit system has four major components; Metrorail, Metromover, bus service, and special transportation services. MDT provides 1432 miles of Metrobus routes with 105 routes utilizing a fleet of 981 buses. Other transit services include the 22.6-mile elevated Metrorail system, a 20-mile Bus Rapid Transit (BRT) line that is the largest in the United States, and the 4.4-mile elevated People Mover system. The passage by County voters of the one-half cent sales tax in 2002 to be used exclusively for transportation provides a dedicated funding source for transportation improvements and is expected to generate more than $150 million annually, which has opened the door to applying for federal and state matching funds. MDT, working with the Citizens Independent Transportation Trust, is in the process of implementing the People's Transportation Plan.

The capital program for FY 2007/08 has total costs of $5.64 billion and expenditures of $3.86 billion through the year 2012/13. The single largest component was for the East-West Corridor. The next highest expenditure was for the North Corridor Extension of Metrorail, then Earlington Heights/MIC Connector, Capitalization of Preventive Maintenance, and Rail Vehicle Mid-Life Rehabilitation. Together, these five projects account for 86.5 percent of the budgeted six-year expenditures. Infrastructure Improvements include the extension to Florida City of the South Miami-Dade Busway - Phase II, the construction of new passenger facilities and improvements to existing facilities, as well as a new bus garage in South Miami-Dade. A total of $80.99 million was spent on new equipment for revenue collection. The remaining funds in this expanded capital program were used to construct and modify park and ride facilities and for planning, administration and contingency. Funding comes from federal grants, County bonds, State of Florida, and the new surtax supported bonds.

Expenditures for Metrorail include vehicle mid-life modernization, repair and maintenance of Metrorail and Metromover facilities, Metromover vehicle overhaul and refurbishment of rail and mover facilities and stations. The largest outlay for the bus system is the acquisition of new buses ($142.38 million) followed by construction of new bus garages ($43.24 million). Equipment purchases include a variety of items ranging from the Automated Vehicle Locator/Monitoring and Radio System, tools and equipment for repair, to bus security and surveillance monitoring devices.

The proposed FY 2008/09 capital program consists of 25 active projects, 13 new ones, and 29 deletions. A significant amount of reprogramming has occurred resulting in cost and expenditures changes. The cost at $6.07 billion is 7.6 percent higher than the previous year, but the expenditure level at $2.92 billion is almost one-fourth lower. Of the 13 newly proposed projects, the Track and Guideway Rehabilitation Subset, the Mover Vehicles Replacement Phase II (17 Cars), and the Earlington Heights (EH) Miami Intermodal (MIC) Connector account for 77.2 percent of the total. Twenty-nine projects are marked as deletions from the program; project numbers 6, 14, 17, 22, 24, 28, 29, 30, 32, 33, 34, 36, 38, 39, 40, 42, 43, 46, and 53 due to funding shifts and/or lack of funding. Project numbers 25, 27, and 47 have now been split into six new projects (#60 and #61), (#58 and #59), and (#66 and #67), respectively. Project numbers 48 through 52 have been incorporated into a newly proposed project (#56). Project #44 has been replaced with a new project (#57). Project #23 has been completed. The funding breakdown for the six-year expenditures is as follows: People's Transportation Bond Program $1.46 billion; Federal grants $1.05 billion; and State of Florida-FDOT $283.01 million. These three sources comprise 95.9 percent of total expenditures. MDT expenditures decrease during the first three years then jump up and increase over the last three.

Water Facilities

The Miami-Dade Water and Sewer Department (WASD) provides about 87 percent of the potable water to consumers in the County. About 416,620 water retail customers are served and 15 municipalities purchase water wholesale. This is accomplished by the operation of three regional and five smaller water treatment plants, with water supply coming from 14 wellfields with 100 pumping wells. The capital program necessary to accomplish this includes wellfield development, the expansion and upgrade of water treatment facilities, pumping capacity and related infrastructure. WASD implements water conservation measures and provides high quality drinking water. In providing these services, WASD interacts with various federal and State regulatory agencies, as well as the Miami-Dade County Health Department and the Department of Environmental Resources Management.

The April 2007/08 adopted program has 19 projects costing $1,242.3 million with $802.06 million to be spent by FY 2012/13. The total cost figure is very close to the prior year's program, while the six-year expenditures are higher by about 9.1 percent. Several revenue sources were used to fund a variety of water supply and quality projects. However, just six projects, excluding project number 19 and its components, account for about 54.5 percent of the six-year expenditures. These are South Miami Heights Water Treatment Plant and Wellfield, Wellfield Improvements, Safe Drinking Water Act Modifications, Water Distribution System Extension Enhancements, Water System Maintenance and Upgrades, and Water Treatment Plant – Alexander Orr, Jr Expansion. All of these projects are ongoing with various subcomponents completed each year.

The currently recommended Schedule of Improvements shows both a higher total cost at $1,271.69 million and higher expenditures at $941.68 million for 19 active projects and one proposed addition. The higher capital outlay is predominantly accounted for by system wide extensions of the water distribution system and the South Miami-Dade Water Treatment Plant and Wellfield. Project number 19 is being redefined and includes a new component (#19G).

Like the ones before it, this six-year schedule of improvements is aimed at meeting current and future needs for water pumping, treatment, transmission, and distribution capacity. Water quality is given high priority also, as dictated by various federal and State regulations and guidelines.